THE CHEMIST AND DRUGGIST

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THE JURIES BILL.

The United Society of Chemists and Druggists display an energy which is in every way admirable, and should command the universal support of the trade. One of the principal objects which the Society proposes to carry into operation is the exercise of an unceasing vigilance over all legislative enactments affecting the interests of the constituency. We are officially informed that every exertion is now being made to insert an important clause in the Juries Bill which is now before the House of Commons, by which Druggists shall be exempted from serving as jurors in a court of justice. The reasonableness of such an exemption cannot for one moment be doubted, and that it would be of material benefit in contributing to the public safety is patent to every discerning mind. All available influence should be brought to bear upon the Legislature, in order to force a recognition of this urgent claim for special consideration. Physicians and Surgeons enjoy an immunity to enable them to prescribe, and a similar privilege should be accorded to the Druggist for the purpose of dispensing such prescriptions. The peculiar responsibility attaching to the sale of dangerous drugs renders the *principal's* constant personal supervision absolutely necessary for the security of the community at large. In the absence of the experienced head of a business, who is, moreover, pecuniarily interested in its success, the public must incur a certain risk, inasmuch as the duties are exceptional, and no one can adequately supply his place. In the majority of cases there are few shops in which qualified managers are employed, and unfortunate patients are thus left to the tender mercy of incompetent junior assistants or careless apprentices. The inconvenience which frequently arises cannot be easily exaggerated, the proprietor being in many instances the only person who *can* make up an old prescription, although it may have been duly registered. It is clearly an act of gross injustice that the Pharmacist as a citizen should be denied a privilege which is conceded to others with less cause. The ready accessibility to the dispenser is equally as essential to the sick as the immediate presence of the medical practitioner, and it only requires these simple facts to be strongly urged upon the promoters of the Bill to lead to an investigation of the matter. In the mean time *local* pressure should be brought to bear upon the respective Members of the House of Commons, challenging their attention to the common sense of the proposition.

TO OUR READERS.

With the next number of the *Chemist and Druggist* we propose giving in a supplement complete detailed lists of the principal collections of Drugs and Pharmaceutical Products forwarded by various foreign countries to the International Exhibition. Such a special collected list will be found useful, not only as a present guide to the collections, but also for future reference and investigation into the value and properties of some of the articles used in foreign countries.

CHEMISTRY AND PHARMACY AT THE INTERNATIONAL EXHIBITION.

By C. W. Quin, F.C.S.,

SUPERINTENDENT OF CLASS II. (CHEMICAL AND PHARMACEUTICAL PRODUCTS).

The Eastern Annex has lately had its full complement of visitors, both scientific and popular. Since our last notice an additional entrance has been made at the North end of the building, which is used daily by thousands of visitors from the northern districts of the metropolis. The exhibitors in this annex owe a great debt of gratitude to the *Times*, *Daily Telegraph*, and other leading journals, who have never ceased to advocate the claims on public interest of the many objects exhibited in this portion of the building. The first-named journal continually recommended the opening of a door at the north end as the only way of making known the many treasures of the Eastern Annex; and at last, by dint of perseverance, aided by several petitions from influential exhibitors, the desired entrance was made, with the good effect already mentioned. During the past month, Class II. has been visited by all the scientific men of eminence, both English and foreign, at present in London. The foreign chemists have mustered particularly strong. A few days since, in a few hours we had the honour and pleasure of seeing MM. Balard, Stas, Fritsche, Fremy, St. Claire Deville, Schroetter, Forchammer, Regnault, Persoz, Peligot, Chandelon, Piria, Boussingault, Lourenço, Von Fehling, Würtz, Payen, and several others equally famous, all looking with wonder and delight at the numerous beautiful specimens exhibited in the class.

Continuing our tour of examination, the first article of importance we notice is Dunn's ingenious marking-ink pencil, placed immediately above Messrs. Pincoff's case, which has already been fully described in the pages of the *Chemist and Druggist*. Still keeping to the cases surrounding the walls of the building, the next object that invites a notice is the very handsome case of Messrs. Savory and Moore. This firm, which does everything well, has fully carried out this principle in the exhibition of the many articles of interest displayed by them. We have here no meritorious show of cut glass and gilding, but only what is in perfect good taste, business-like, clean, and bright. The samples of cod-liver oil, both plain and medicated, are the first things that, side by side with oil from Norway and Newfoundland, merit our attention. Messrs. Savory and Moore exhibit a very light-coloured specimen of this valuable remedy, prepared by themselves from the freshest cod livers at a low temperature, by which means they avoid the disagreeable taste and odour thought to be inseparable from this preparation. They also send specimens of the oil combined with quinine and iodine, which look so bright and clear that one almost longs to be consumptive. A specimen of Dugong oil (which, by the way, appears to be more like fat than oil), much used as a substitute for cod-liver oil in Australia, will be looked on with great interest. The compound syrup of phosphate of iron, a preparation containing phosphates of iron, lime, and soda, and known in America as "chemical food," is also shown. Some fine specimens of santonin, the active principle of worm seed, pepsine wine, *datura tatula* cigarettes, much used in asthmatic cases, and some granulated effervescing citrates, make up the rest of this very interesting and valuable case. We have, however, omitted to mention some fluid extracts of opium, sarsaparilla, taraxacum, sumbul, and buel, in which advantage has been taken of the antiseptic properties of glycerine. Many patients object to the use of extracts containing alcohol, from their peculiar taste and stimulating effect. The introduction of an agent which has all the antiseptic properties of the spirit without its bad effects, is an extremely useful and valuable innovation. A specimen of anarcotine will complete the list. This alkaloid, which, although obtained from opium, has no narcotic properties, has recently been much used in India as a substitute for quinine. It has been tested in this country, and has been found an efficient febrifuge.

Next to Messrs. Savory and Moore come Messrs. Hopkins and Williams, a house famous alike for its pharmaceutical and scientific chemicals. Here we again meet with some excellent scale preparations, amongst them one which has excited great interest amongst foreign pharmacists, the lithio-citrate of iron. From the number of specimens containing lithia and its compounds, exhibited by first-rate houses, we judge that this valuable alkali is becoming more known and appreciated; no doubt its preparations will occupy an honourable place in the new pharmacopœia. The citrate of iron and strychnia is also exhibited by Messrs. Hopkins and Williams. Anxious to keep up their scientific reputation, they send some interesting rarities, amongst which may be especially noticed the oxalate of cerium, a fine specimen of aconitine, and a mass of caffeine, prepared by a new process, which consists in dissolving out the alkaloid from the powdered coffee berries or tea leaves, by means of benzole. The iodide of cadmium, pyrogallic acid, and cyanide of potassium, are fine specimens of photographic chemicals. Messrs. Foot and Co., of Battersea, commence their display with a series of products illustrating the manufacture of acetic acid and its compounds, beginning with the rough wood and ending with the various acetates. The specimen of glacial acetic acid exhibited by them is the only one which, although in a very hot locality, has preserved its solidity through the trying heat of the last few weeks. The various artificial essences in this case are extremely interesting. By judiciously combining different ethers, Messrs. Foot have succeeded in imitating the flavours of ribstone pippin, raspberry, strawberry, peach, and even the humble but aperient blackberry. They also contribute butyric ether and many products used in dyeing, such as garancine, several of the aniline dyes, chromate of soda, egg albumen, &c., illustrated by specimens of the dyed and printed material. Five samples of nitric acid, one of which is the monohydrated acid, are also exhibited. Messrs. Huskissons appear to have made iodine and the iodides their special articles; and we may remark, in passing, that the exhibition of complete series of important products is one of the chief features of this year's display. The English chemical manufacturers seem anxious to appear not only as makers of chemicals by rule of thumb, but also as scientific men who have the necessary knowledge and appliances for forming a scientific series of chemical products. The collection of Messrs. Huskissons in particular illustrates this important fact. They have not only endeavoured to obtain a large number of iodides, but they have also tried to procure them in forms illustrating the crystallography of these important compounds. In fact, Messrs. Huskissons' display is a lesson in crystallography. They commence their series with a fine specimen of re-sublimed iodine, following it with two magnificent crystallisations of iodide of arsenic, and biniodide of mercury, and smaller, but no less interesting, samples of the iodides of potassium, sodium, ammonium, calcium, magnesium, silver, lead, iron, zinc, antimony, phosphorus, and sulphur. In a large jar at the back of the collection are some magnificent crystals of iodide of potassium and bromide of potassium, some of the cubes of the former salt measuring nearly an inch and a half in the side.

The iodide of arsenic is remarkable in the form of its crystals, which is exactly that of certain red seaweeds common on our English coasts. Thus does Nature reproduce herself. The singular hollow truncated pyramidal crystals of iodide of ammonium are very curious; not less so a fine artificial octahedral crystal of sulphur. Fine samples of true bicarbonate of soda, a product for which this house is specially famous, of oxalic acid, of Rochelle salt in beautiful crystals, of citrate of potash, and many others, complete the collection. To the scientific chemist who is interested in crystallography, we specially recommend the crystals of acetate of zinc, sulphate of potash, iodides of potassium and ammonium, bromide of potassium, nitrate of potash, Rochelle salt, phosphate of soda, and sulphur. Their near neighbours are the old-established firm of Davy, Macmurdo, & Co., whose exhibition is most varied and interesting; their mercurial preparations, including four specimens of calomel and corrosive sublimate, are particularly good. They include the persulphate, nitrate, chloride, bichloride, biniodide, cyanide, ammonio-chloride, and subsulphate. They also send several excellent scale preparations. A series of valerates is shown, consisting of the valerates of iron, zinc, bismuth, quinine, soda, and ammonia. In preparations of scientific interest there is also much to be admired. The acetate of magasia, a very beautiful salt, sulphocyanide of potassium, iodoform oxalic and oxamic ethers, chloride of platinum, a fine sample of chloride of gold, the formiate of lead and of ammonia, oxamide, oxalate of methyl, hydruret of salicyl, bromic ether, some large and beautiful crystals of naphthaline, and two good specimens of iodide and bromide of cadmium, are proofs of the scientific excellence of this old-established house.

THE NATURAL ORDERS OF PLANTS.

BORAGINACEÆ—THE BORAGE ORDER.

The plants included in this order consist of herbs and shrubs with more or less rounded stems, and are inhabitants chiefly of the temperate regions of the northern hemisphere. They abound in all the southern parts of Europe, the Levant, and middle Asia. According to Dr. Lindley, they become "less frequent as we approach the arctic circle, and almost disappear within the tropics, a few species only being found in such latitudes. In North America they are less abundant than in Europe. Pursh reckons but twenty-two species in the whole of his Flora, while the little island of Sicily alone contains thirty-five, according to Presl."

Some plants of the order are cultivated for the ornamentation of our gardens, and the flowers of many are much prized by bees. The order comprises fifty-four genera, and six hundred and eighty-three species, and belongs to the class Exogens, sub-class Corolliflorœ.

Botanical Characters.—The leaves are entire, exstipulate (destitute of the little leafy appendages at their base termed stipules), alternate, and frequently covered with asperities, consisting of hairs proceeding from an enlarged indurated base. The inflorescence (the manner in which the flower buds are arranged on the axis) is scorpioid (rolled towards one side like a crozier, and unrolling as the flowers expand), with regular symmetrical flowers. The calyx (outer floral covering) is persistent (does not fall off), with four or five divisions. The corolla (inner floral covering) is monopetalous (the petals more or less united together), hypogynous (inserted beneath the ovary or lower part of the female organ), and generally regular (the petals and sepals of equal size or united together in equal degrees); four or five partite, and generally furnished with curious scales in the throat, which are considered by some to be abortive stamens. The æstivation (the manner in which the petals and sepals are folded together before expansion) is imbricated (overlapping one another like the tiles of a house). The stamens (male organs) are inserted upon the corolla, correspond with the number of its lobes, and alternate with them. The ovary (that part of the female organ which contains the ovules or rudimentary seeds) is deeply four lobed, with a solitary ovule in each lobe. The style (that part of the female organ which connects the stigma and ovary) simple, arising from the lobes of the ovary. The stigma (that part of the female organ that receives the pollen) simple or bifid (split halfway into two parts). The fruit consists of two or four small, brittle, seedlike fruits, termed achænia, which are placed at the bottom of the persistent calyx. The seeds are destitute of albumen, and the embryo is straight with a superior radicle.

DISTINCTION FROM OTHER ORDERS.

From *Lamiaceæ*, the Labiate order, by the regularity of the corolla, the presence of five fertile stamens, the absence of resinous dots in the foliage, round stem, scorpioid inflorescence, and rough, alternate leaves. From *Nolanaceæ*, the Nolana order, by their scorpioid inflorescence, superior radicle, and exalbuminous embryo; and from all other orders allied to it, by its deeply four lobed ovary.

Lindley divides the order into two sub-orders, Anchusidæ and Cynoglossidæ.

General Properties.—Mucilaginous and emollient, and for the most part harmless, and possessed of but little value as medicinal agents. Some few are stated to be astringent, and others contain nitrate of potash, and impart coolness to beverages in which they are steeped. The roots of some species are of a reddish colour, and useful as dyeing agents.

PRINCIPAL PLANTS AMD USES.

1. *Sub-order Anchusidæ.*

ANCHUSA.—The species *Tinctoria*, or Alkanet, has a dark blood-red root, which is employed for colouring oils, and used in perfumery and in dyeing woods, &c.; that of the species *Virginica* possesses similar properties. The generic name is said to be derived from αγκουσα, paint, the red root yielding a dye formerly used for the face and other purposes.

BORAGO.—The species *Officinalis*, or Common Borage, was formerly much esteemed as a pectoral medicine, and on account of supposed exhilarating properties. A decoction of the leaves mixed with honey is said to make a good ptisan. They possess the singular property of cooling liquids, said to be due to the nitrate of potash which they contain, and are used as an ingredient in the beverage known as "cool tankard," a summer drink, made with wine, water, lemon, and sugar. When young they are said to be agreeable in salads and as a potherb, and have been esteemed by some as a pickle. The roots are mucilaginous and emollient, and the whole plant possesses an odour similar to that of the cucumber. It is thought to have been originally introduced into Europe, where it now flourishes, from Aleppo.

ECHIUM.—The species *Plantagineum* is used in Brazil for similar purposes as Borage in this. The roots of the species *Rubrum* contain a reddish-brown substance, which is used by dyers. The species *Vulgare*, Common Viper's Grass, or Viper's Bugloss, is an indigenous plant, met with in sandy cornfields, on walls, and on rubbish, particularly on the clay schistus thrown out of coal-mines. When dried and powdered it is said to form an ingredient in the celebrated Spanish remedy against the bites of vipers and mad dogs. Bees are greatly attracted by the showy blossoms. The generic name is said to be derived from εχις, a viper—its seeds, when ripe, resembling the head of that reptile.

LITHOSPERMUM.—The bark of the root of the species *Tinctorum*, or Common Gromwell, an indigenous plant, contains a dye similar to that of Alkanet, and is used by dyers. "The girls of the north of Europe are said to paint their faces with the juice of the root upon days of festivity." Its generic name is derived from λιθος, a stone, and σπερμα, a seed, from the strong hardness of the seeds.

MYOSOTIS.—The species *Palustris* is the Marsh Mouse-ear, or Forget-me-not; of the origin of the latter name, many anecdotes are extant. Its generic name is derived from μυς, a mouse, and ους ωτος, an ear, alluding to the soft and erect smaller leaves.

ONOSMA.—The species *Echioides* contains a reddish-brown substance used by dyers.

SYMPHYTUM.—The species *Officinale*, or Common Comfrey, an indigenous plant, growing in wet ditches and on the banks of rivers, was formerly regarded as a vulnerary. The leaves, if gathered when tender, form a substitute for spinage, and give a grateful flavour to cakes and panada; when blanched, they are sometimes eaten like asparagus. The roots are sweetish, with some astringency, glutinous, and mucilaginous, and were formerly recommended in catarrhal affections. Dyers use a decoction of them to extract the colouring matter of gum-lac. Its generic name is derived from συμφυειν, to cement—probably in allusion to the healing quality of the mucilaginous roots.

STEENHAMMERA.—The leaves of the species *Maritimum* (Lithospermum maritimum) have the taste of oysters, and hence it is called the Oyster-plant in Scotland.

2. *Sub-order Cynoglossidæ.*

CYNOGLOSSUM.—The species *Officinalis*, or Great Hounds-tongue, is a common indigenous plant, growing by roadsides and amongst rubbish. Its leaves are bitterish, and yield a strong-scented oil, and some consider they possess narcotic properties. The scent of the plant is disagreeable, resembling that of mice, and when bruised and laid in any place frequented by rats or mice, it is said they immediately forsake the premises. The generic name is derived from κυνος, a dog, and γλωσσα, a tongue—descriptive of the shape of the leaves.

TRICHODESMA.—The different species are considered to possess diuretic properties, and, according to Royle, are one of the cures for snake-bites in India.

DR. HASSALL'S CASE AT THE EXHIBITION.

From "The Grocer."

SPECIMENS ILLUSTRATING THE ADULTERATION OF FOOD. (788.)

"*La falsification des falsifications!*" In these words an illustrious stranger lately expressed his opinion of Dr. Hassall's collection of specimens. He refused to believe in the extravagant frauds which the exhibitor professes to expose, and concluded that the specimens had been made for show, not for sale; in other words, that they illustrated the adulteration of adulterations. We are unwilling to indorse this uncharitable opinion; for though we have never had much faith in Dr. Hassall, we cannot think that he would knowingly mislead the public by a display of sham adulterated articles. But while we exonerate him from the charge of having manufactured his specimens, we find him guilty of attempting, by the most unfair means, to injure the character of the British tradesman; for we utterly repudiate the notion that the contents of his case illustrate the common adulterations of food. They are evidently the fraudulent rarities which he has been collecting ever since he commenced to ride his profitable hobby, and are only comparable with the wooden nutmegs of the Yankee trader, and the painted sparrows of the street bird-seller. We learn from the inscription on the case, that the adulterated articles of food were purchased chiefly in London. We wish we could prevail upon Dr. Hassall to publish the names and addresses of the vendors, for we have a strong suspicion that most of the specimens were procured from the worst shops of the worst neighbourhoods. There are several articles exhibited which we are convinced were never sold, and to account for their appearance in the case we can only advance the theory that they must have been sent to Dr. Hassall to sound the depths of his credulity. Wherever the different articles came from, they are utterly worthless as specimens; and unless we are greatly mistaken, the whole collection is generally regarded as a blot upon the Exhibition —a disgraceful puff put forward by a superficial chemist as a scientific display. The disgusting compounds shown to the world as illustrations of trade sophistication, may impress the ignorant and frighten the weak, but thoughtful and practical men will see through them. Dr. Hassall is no longer looked up to as the "guide, philosopher, and friend" of swindled respectability. He has brought his bogie Adulteration so frequently before the public that they begin to suspect that it is nothing but a turnip lantern after all, and his warnings are rapidly becoming as useless as his testimonials. It may be imagined that these animadversions are dictated by tradesmen whose frauds have been exposed by the analyst, but we assure the reader that such is not the case. We merely express our honest convictions, which we believe will be found to agree with those of nearly every true man of science.

We need only mention a few of the articles shown by Dr. Hassall to enable the reader to form an idea of the collection. There are Lie teas which are so obviously lies that they could never deceive anybody. There are teas faced with black-lead, teas mixed with earth, and teas consisting entirely of exhausted and re-dried leaves. There is a sample of "mixed spice" with ground rice and baked-potato flour as the principal constituents. We find clay in cocoa, mustard husk in ground ginger, roasted beans in coffee, red lead in cayenne, copper in pickles, and other poisonous and nasty admixtures which we do not care to enumerate. The sweetmeats exhibited suggest the idea that confectioners waste half their time in searching for the most deadly poisons. Those minute comfits called "Hundreds and Thousands" may here be seen—and here only, we imagine—coloured yellow with chromate of lead, green with arsenite of copper, red with sulphide of mercury, blue with Prussian blue, and yellow with gamboge. Then there are some sugar cucumbers to which such a deadly-looking green has been given that a child of four years old would naturally shrink from them. We are told that they are coloured with Prussian blue and chromate of lead, but we are not told how Dr. Hassall came by them. In the sugar carrots and radishes we find the confectioners' love for poisons still more strikingly illustrated. The carrots are coloured with red lead, and their tops with Prussian blue and chromate of lead; while the radishes glow with vermilion and magenta, the tops being tinged with Brunswick green. We cannot under-stand why the confectioner should have used two such expensive colours as vermilion and magenta when one of them would have sufficed, unless to oblige Dr. Hassall. As an example of a nice admixture, we may call attention to some brandy-balls adulterated with lamp-black. On the lower shelves of the case are samples of potted fish, pastes, sauces, and butter, all most extravagantly adulterated. Though the bottles are sealed up in the true tradesman's fashion, they are evidently not the bottles in which the goods were purchased, and afford us no clue to the vendors. Had Dr. Hassall affixed the names of the sellers to the different articles, his "sensation" collection might have been worth looking at; as it is, no one can view it as anything but an impudent advertisement.

VERATRUM VIRIDE.

Synonyms.—American Hellebore, Swamp Hellebore, Indian Poke, Itch Weed, Bear Weed, Indian Uncus.

In the year 1817, some experiments on the properties of this plant, made by Dr. Ware, were published in Dr. Jacob Bigelow's *American Botany;* and in 1835 Dr. Charles Osgood published a paper on its medicinal properties in the *American Journal of the Medical Sciences* for the month of August. Latterly, it has been much employed in the United States as an arterial sedative in inflammatory affections, and has recently been introduced to the notice of the profession in this country.

Botany.—The American Hellebore is a perennial belonging to the natural order *Melanthaceæ*—the Colchicum Order, and indigenous to many parts of the United States, from Canada to Carolina, growing in swamps, wet meadows, and on the banks of mountain streamlets. The rhizome, which is the officinal part, has, when fresh, a disagreeable odour, which it loses by drying. Its taste is bitter, accompanied by an unpleasant acrimony spreading through the mouth and fauces, which is very durable. Autumn is the proper period for its collection, and, as its properties deteriorate by keeping, it should always be collected annually.

Chemistry.—The active properties of the plant are thought to depend upon an alkaloid, which has been obtained from it and named *Veratrin.* It has been asserted to be identical with Veratria, but on this point further investigation is needed. Alcohol and ether extract the virtues of the plant, but heat impairs them, and long boiling is said to entirely destroy all activity.

Medicinal Properties.—Much discrepancy of opinion exists amongst the profession in regard to the therapeutic properties of this remedy, for whilst some assert that they have employed it most beneficially in a vast number of ailments, others deny its merits, and consider its use to be attended with danger. Many, for instance, deny that it possesses narcotic properties; but Thatcher, Dr. Lee, and Dr. Osgood mention that "grain soaked in a strong decoction of the rhizome is used by the farmers of New England to protect their crops from birds, which, after swallowing them, are rendered incapable of running or flying, and so are readily caught; but if left undisturbed for a time, they recover from the paralysing effect, and fly away." It is said to have constituted the base of the famous empirical medicine for gout and rheumatism, Eau Medicinale d'Husson. In Tilden and Co.'s *Book of Formulæ*,* we find it described as "slightly acrid, an excellent expectorant, a certain diaphoretic, nervine, and never narcotic, emetic, and arterial sedative, which last is its most valuable and interesting property, for which it stands unparalleled, and unequalled as a therapeutic agent." It is said to be a powerful reducer of the circulation, and especially valuable in pneumonia, in which it is stated to prove successful without the assistance of any other remedy, except in low typhoid cases, relieving the dyspnœa, promoting expectoration, and effecting a rapid recovery both in children and adults. It is also reported to relieve the pain arising from carious teeth when opium and other narcotic remedies fail, and to prove a most successful external application in inflammations of the gums and mouth, and to cause rubefaction and even vesication of the surface. When diluted with starch, it has been employed as an errhine and sternutatory. In the form of ointment and decoction, it has been used as an application in tinea capitis, scabies, &c.; its employment, however, is said to be attended with some danger. In the treatment of pleuritis, peritonitis, palpitations, hypertrophy of the heart, acute rheumatism, acute mania, and all inflammatory diseases, whether idiopathic or from surgical injuries, it is stated to have been employed with great success, and as an internal medicine to have proved beneficial in chronic skin diseases.

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* P. 144.

Dr. J. L. Atlee, jun., employed it successfully in puerperal mania. Dr. Baker, of Alabama, considers it to be "as valuable as a nervine as an arterial sedative, the most efficacious remedy in the convulsions of children and highly useful in puerperal convulsions and chorea."

Dr. Fordyce Barker, Professor of Obstetrics in the Medical College of New York, "employed it for more than twelve years in puerperal fever with the greatest success," but "considers that it requires care in its use, and that the patient should be under careful medical watching." Dr. A. A. Davids "had a very high opinion of its powers in pleurisy, pneumonia, and all inflammatory diseases." Dr. Lee "considers it to be a powerfully active, acrid narcotic, exerting a sedative influence over all the vital functions, especially the nervous and circulatory systems; that it occasionally acts as a drastic cathartic, and attributes the non-observance of this property to the smallness of the dose." Dr. Merrett, of London, regards it "as unerring in its action as a cardiac sedative," and bears testimony to "its influence in promoting the secretions generally." Dr. Norwood says that "it is not narcotic, never stupefying like opium, but acting as a nervine, allaying morbid irritability, convulsions, and neuralgia, and relieving chorea and epilepsy. It is also a safe emetic, and, by virtue of this action, peculiarly applicable in whooping-cough, croup, asthma, and a certain, most powerful expectorant and diaphoretic; but especially valuable as an arterial sedative. In small doses it promotes the appetite. He has seen it reduce the pulse as low as 35 in a minute without nausea or vomiting." Dr. E. J. Oliveros administered it successfully to children suffering from inflammatory affections, especially pneumonia, but it must be employed with great discretion and judgment. Dr. Osgood, of Rhode Island, considered it "to possess narcotic properties, and that its influence over the circulatory system was very decided. It is useful in gout, asthma, dysentery, dyspepsia, coughs and catarrh, acute rheumatism, and pneumonia, excepting typhoid cases." Dr. A. F. Pattee used it with great success in pneumonia and with good effect in dysentery, and considers it to be, in conjunction with morphia, one of the most efficient remedies for simple dysentery; he also employed it "with much benefit in idiopathic fever." Dr. T. S. Smith, of Tennessee, says, "It cures pneumonia." Dr. H. H. Toland, of San Francisco, "found it invaluable in pneumonia, pleuritis, and catarrhal fever, both in adults and children; and equally so in active hæmorrhages and rheumatism." Dr. Tully, of Yale College, considered it "to be narcotic and emetic, and to have the power of exciting the secretions of the liver, the bronchial membranes, and the kidneys." Dr. Ware found it acted as an emetic, and required a longer time to elapse before action ensued than any other emetic substance, and that it did not purge. He considered it "applicable and remedial in gout, and as an external application in certain cutaneous diseases." Dr. G. B. Wood "found it to be longer acting in producing emesis than any other medicine," and says "it seldom, or never purges." Drs. Bigelow, Osgood, Tully, and others state that it reduces the power and frequency of the pulse in a very decided manner, lowering it in the course of an hour to 40 or even 20 beats in a minute.

PREPARATIONS AND DOSES.

The following are given in Tilden and Co.'s *Book of Formulæ*. "Fluid extract. For an adult male gtts. ij, increasing gtt. j each portion given, or, for greater convenience or certainty of administration, combine in equal proportions with simple syrup, or syrup of squills, and give gtts. iv, increasing gtt. j or gtts. ij each portion, till nausea or vomiting ensues, or the pulse is reduced to 65 or 70 beats per minute. For children begin with gtt. j, combined with equal portions of syrup of squills, and in crease gtt. j each portion. When the pulse is sufficiently diminished, reduce the dose one half, in all cases continuing it a sufficient length of time to prevent any return of the symptoms. Veratrin, gr. $\frac{1}{16}$ to gr.ss; wine gtts. xx to gtts. xl. The tincture is given in doses of from gtts. iv to gtts. vj at the beginning, gradually increased until some obvious effects are produced: if the pulse is reduced or nausea occurs, no increase of the dose should be made; if vomiting, it should be suspended, and when resumed the dose should be diminished."

DIALYSIS.*

By W. B. Tegetmeier.

The application of the researches of Mr. Graham respecting the diffusion of liquids to the purposes of practical chemistry and the arts of civilisation, offers one of the most interesting examples of the eventual tendency of even the most abstract scientific investigations to become practical, and so to aid in promoting the comfort and welfare of mankind. It is almost impossible to imagine a subject offering apparently less practical advantages than does the admixture of two liquids with each other, and yet from the rigorous and scientific investigation of the phenomena of their mutual diffusion, and the laws which regulate its operation, has sprung the new method of dialysis, which promises to revolutionize a very large number of chemical operations, and to introduce new methods of manufacture into the arts that will entirely subvert many existing processes.

The subject is so interesting and so novel in its practical bearings, that it will be desirable to trace its gradual development from an abstract scientific truth to its present useful applications. Mr. T. Graham, the Master of the Mint, has long held a very high position among the most eminent scientific chemists that this country has produced; among other subjects that were diligently investigated by him some years since were the laws which regulate the mutual diffusion of gases. The inquiry as to the rapidity with which liquids of different densities diffused themselves followed almost as a natural sequel to that respecting the gases. Mr. Graham's first experiments on the diffusion of liquids were made by means of what he terms *phial diffusion*, and they were performed as follows:—Solutions of different salts, whose diffusive powers were to be examined, were prepared of equal strength, and phials of exactly the same size and shape were filled with these solutions, and then placed separately under the surface of water contained in much larger vessels, the mouths of the phials being left open. Under these circumstances it was found that a certain proportion of the heavy solution contained in the phial rose in opposition to the attraction of gravitation, and mingled with the water by which the phial was surrounded. In the case of coloured solutions, this diffusion was visible to the eye, and in others it was capable of being proved by analysis. It was found, however, that the solutions of different bodies diffused themselves with very different degrees of velocity. Thus common salt diffused with twice the rapidity of Epsom salts or sugar. These, again, are double as diffusive as a solution of gum; and albumen, or white of egg, in its turn, does not possess one-fourth of the diffusive power of gum, nor scarcely more than one-twentieth of that of common salt.

These experiments were varied in different modes, by allowing the diffusion to take place under slightly varying conditions, but the same general results were obtained. The laws deduced from these phenomena are, that crystalline bodies—such as salt, sugar, nitre, etc.—are much more readily diffusible than those that are amorphous, such as gum, gelatine, albumen, solution of starch, or any substances that enter into combination with water in the same manner that they do.

Hence, with reference to this subject, Mr. Graham arranges substances into two groups: those crystalline in character and readily diffusible in water he terms *crystalloids;* the solution of these is always free from gumminess or viscosity, is sapid, possessing, in a higher or lower degree, the power of affecting the nerves of taste. The other class, whose diffusive power is low, he distinguishes as *colloids*, because gelatine or glue (*colle*) may be taken as their type. The solutions of these substances have no disposition to crystallise, and in the solid form they do not possess flat surfaces, such as characterise crystals, but exhibit an irregular roundness of outline. Their solutions are always gummy when concentrated, and what is strikingly remarkable, they are all insipid or wholly tasteless. In the moist condition they are liable to undergo great changes, and solutions of them in a state of purity cannot be preserved unaltered for any length of time.

A solution of a colloid body such as gelatine is found to offer scarcely any impediment to the diffusion of a crystalloid throughout its entire mass. This diffusion will also take place through any soft solid with almost equal rapidity; a very familiar example of this fact is shown in the process of salting meat, in which case the rapidly diffusible crystallisable sea-salt penetrates to the interior of the flesh, which is a combination of different colloid bodies, such as fibrin, albumen, gelatine, &c.

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* Extracted from the *Intellectual Observer* for June.

Upon the fact that crystalloid bodies possess the power of diffusing themselves through soft solids depends the operation known as *dialysis*, and the construction of the instrument called the *dialyser*. This consists simply of a tambourine-shaped frame of gutta-percha, over which is tightly stretched a piece of parchment paper, which completes the resemblance to that musical instrument. This parchment paper is quite impervious to water, so that no passage of fluid similar to filtration can take place through it. If the dialyser be floated on the surface of pure water, and a mixed solution of a crystalloid and a colloid body be poured into it, the process termed dialysis immediately commences; all the crystalloid matter passes through the parchment paper into the water, and the colloid matter remains behind in the dialyser. As an instance of its action, let us suppose a mixed solution of sugar and gum to be poured into the dialyser, when the sugar passes through into the water below, and the gum remains behind in a pure form. If a mixture of the beautiful aniline dye known as magenta and some burnt sugar or caramel be employed, the passage of the magenta into the pure water is readily observed, the dark-brown uncrystallisable colloid caramel remaining in the dialyser.

Other facts of great interest have been discovered as the results of these investigations. Thus it is found that by means of dialysis, we may obtain pure in solution many substances hitherto regarded as being perfectly insoluble. Amongst these may be mentioned silica, alumina, Prussian blue, peroxide of iron, stannic acid, and numerous other bodies of a similar character.

For example, if a solution of soluble glass, which is formed by fusing silica with an excess of soda, be taken and acidified with hydrochloric acid, the acid unites with the soda, forming common salt, or chloride of sodium, the silica remaining for some time dissolved in a gelatinous or colloid form, mixed with the solution of the chloride of sodium. If, however, this mixture of gelatinous silica and common salt be placed in the dialyser, the salt rapidly diffuses itself into the water in the outer vessel, and the solution of pure silica in water remains in the dialyser. This solution is found to have a feebly acid reaction on test paper, but not to the taste, as, being a colloid, it cannot pass through the membrane of the tongue so as to affect the nerves of taste. The solution of silica remains for some time perfectly limpid, but eventually sets into a firm jelly. This alteration may be brought about immediately by the presence of several substances, particularly by any earthy carbonate such as chalk. This solution of pure silica possesses remarkable properties; it is absorbed by gelatinous tissues such as the skin of animals, in the same manner as tannin; and like it converts them into a kind of leather, which possesses the remarkable property of not putrefying when kept moist. In the same manner a solution of pure peroxide of iron may be obtained, by first dissolving excess of the hydrated oxide in hydrochloric acid, and then dialysing, when a colloid solution of oxide of iron remains, that is capable of being gelatinized like the silica.

Prussian blue, which is insoluble in pure water, is capable, when recently precipitated, of being dissolved by the aid of gentle heat in a solution of one-sixth of its weight of oxalic acid, when it forms the well-known permanent blue ink. If such a solution be dialysed, the Prussian blue is, in the course of a few days, obtained in a solution in pure water, and may be rendered gelatinous by the addition of sulphate of zinc and several other metallic salts, as the solution of silica is gelatinized by the addition of carbonate of lime.

Such are a few of the many examples of these remarkable phenomena. They are as yet of too recent discovery to have been applied to many practical purposes, but a vast number of applications at once suggest themselves. In cases of the suspected poisoning of articles of food, the poison, if a crystalloid substance like arsenic, can be readily dialysed and obtained in a pure form, however heterogeneous may be the mixture in which it is contained.

Dyeing will be greatly facilitated by steeping a fabric in a pure solution of some colloid dye, which will unite with the animal or vegetable fibre as it gelatinizes.

The purification of many drugs, and the separation of different substances in the chemical arts, will be rendered much easier than heretofore. In fact there appears scarcely a limit to the application of this principle. Already, as may be seen by the report of Mr. Church's paper, read before the Chemical Society, and reported in our second number, page 156, dialysis has thrown light upon obscure points in geology, such as the formation of flints and other silicious fossils, and it promises equally to benefit physiological research. In fact, humble and inconspicuous as its phenomena may appear at first sight, it is probable that in its influence on science and art, it will greatly surpass any discovery of late years.

PHARMACY.*

BY JOHN J. THOMSEN.

At the present day the word Pharmacy would not be regarded as a very flattering exponent of the profession, being derived from a Greek word signifying witchcraft, yet if we trace the word to its origin we find it honourable in the highest degree. The use of medicine may be said to be coeval with disease, and the beneficent and charitable object of its use endowed its patrons with a superhuman or priestly character, thus explaining why we find its earliest records among the temples.

In remote ages the Chaldeans or priests of Assyria and the priests of Egypt appear to have had the keeping of learning and medicine—with what proficiency in the latter, however, history is not very clear. The remarkable resemblance which exists between the attributes of the Isis, Osiris, and Thouth of Egypt, and the Apollo, Minerva, and Orpheus of Greece, leads us to the conclusion that much if not all the knowledge of medicine known in remote ages was possessed by the Asclypiades or descendants of Æsculapius. The manipulations and soothings practised by the priests of Cnidos and Cos developed electricity, and without knowing the cause they performed all the wonders of table-moving, and received psychological revelations with as much facility as our modern mesmerizers. This, together with observing the mysterious power of medicine to remove disease, explains why the imaginative Greeks attributed all to witchcraft, and called the art Pharmaceutic.

Pharmacy as a separate profession does not appear to have been practised among any people previous to the Romans, and even among them the art, as described by Celsus, was mixed, resembling that of the Surgeon Apothecary of modern times.

It gradually began to assume a more distinct and definite form as the complicated and multifarious vegetable compounds of Galen and the chemical preparations of Paracelsus required labour for their productions. These preparations, though very tedious and operose to produce, were not remarkably efficacious, and thus without much change Pharmacy lingered through the dark ages of mystery and superstition. The true development of Pharmacy as a science may date from the introduction of Pharmacopœias or Dispensatories in the 16th century, when approved formulæ for the preparation and composition of medicine were accurately described, and were sanctioned either by the credit attached to the individual author of them, or were enforced by the civil authority of the respective countries in which they appeared. The earliest book of this description which attained any degree of reputation was that of Valerius Cordus, which was published at Nuremberg, 1542. Since that time most of the countries of Europe have had their own Pharmacopœias, published under the authority of their respective governments. Numerous other Dispensatories have been compiled by private individuals at different periods, but in consequence of the great improvement continually made in Pharmacy, changes have been constantly introduced as these publications successively appeared—and the United States Dispensatory, 1858, may be regarded as containing all valuable information on Pharmacy up to the time of its publication.

The practice of Pharmacy is—

First.—To select good and sound medicines, and to preserve them.

Second.—To subject them to different operations, either to concentrate their virtues, separate their active principles, or to unite them into new forms, so as to render them more efficacious and convenient for practice.

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* Extracted from the Journal of the Maryland College of Pharmacy.

Thirdly.—To compound and mix them for practice so as to be palatable and acceptable to the patient.

When we consider the numerous varieties of the same species of plants in nature and the primitive forms in which Medicines are presented, the duties and responsibilities of the Pharmaceutist become apparent. We can also appreciate the skill and knowledge requisite, for a just and honest performance of those duties. A sense of honour and probity is preliminarily necessary to avoid the temptation to procure inefficient and worthless medicines, and a knowledge of chemistry, Materia Medica, and Botany to direct his judgment in selecting and procuring them. This proficiency must be the result of long and patient study, and though no longer of a ghostly character, its object is still the same, to relieve pain and suffering, and to restore lost health. Upon the probity and skill of the Pharmaceutist depends the reputation of the art.

FRENCH FORMULÆ FOR DISINFECTION OF THE BREATH.*

(*Translated from the French of M. A. Chevallier.*)

NUMEROUS announcements of medicaments designated as *antiozainiques*, and proposed as sure means for producing a disinfection of the breath, have lately been made to the public.

Having undertaken the examination of these preparations, I found that the hypochlorite of lime was the substance employed as the disinfecting agent, and that it was the sole active agent in the preparations. I now give the principal formulæ which may be employed for this purpose.

Alcoholized solution of hypochlorite of lime.

Take of Dry hypochlorite of lime 12 grammes.
Distilled water . . 64 ,,

Triturate the hypochlorite of lime in a glass mortar with a pestle of the same substance; when the hypochlorite has been thoroughly pulverized add a portion of the distilled water; allow the mixture to rest until the liquid has become transparent; then decant; add a second portion of water, triturate and allow to rest, again decant; this process is repeated a third time. The three liquids which have been decanted are then mixed, and 64 grammes of alcohol at 36 deg. are added, four drops of oil of roses or some other essential oil are added, at the pleasure of the apothecary. The solution thus prepared may be employed to remove the fetid odour which is given off by the gums,—an odour often due to the diseased condition of the tissues. To employ it, a half teaspoonful is poured into an ordinary tumbler of water, and the gums are washed with the mixture, employing for the purpose a sponge-brush. The same preparation may be employed to remove the odour of tobacco, rinsing the mouth several times with common water, to which has been added a teaspoonful of the liquid.

Inasmuch as the odour of the essential oil is gradually diminished in time, said diminution taking place at the expense of the chlorine of the hypochlorite, it is suggested that this inconvenience may be obviated by preparing the solution with water and the hypochlorite of lime, and keeping it in one bottle, while the aromatic alcoholic solution (prepared of 64 grammes of alcohol, at 36 deg., and four drops of essential oil) is preserved in another, both being well stoppered. When it is desired to use the liquids a half teaspoonful of the chlorinated solution, and a like quantity of the aromatic alcohol, are poured into a glass of water, which is then employed as described.

Doctor Angelot's Preparations.

The following preparation has been employed by Dr. Angelot, of Briancon, in the treatment of ulceration of the gums, a very frequent complaint with soldiers :—

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* Extracted from the Journal of the Maryland College of Pharmacy.

Take of hypochlorite of lime	from 8 to 15 decigrammes,
Mucilage of gum arabic	,, 32 grammes,
Syrup of orange peel	,, 16 ,,

Mix thoroughly. This mixture is employed as a lotion to the ulcerated gums.

Pastilles of hypochlorite of lime.—Several formulas for the preparation of these pastilles have been successively published; these preparations have the advantage over those which are liquid, of being more easily transported.

First formula.

Take of hypochlorite of lime .	28 grammes,
Sugar, flavoured with vanilla	12 ,,
Gum arabic	20 ,,

The pastilles are made *secundem artem*, so as to weigh from 8 to 9 decigrammes. Two or three of these pastilles are sufficient to remove from the breath the disagreeable odour produced by tobacco smoke. The pastilles thus prepared have a gray colour, and become quite hard; if pastilles of white colour are required the following substances are employed:—

Second formula.

Take of dry hypochlorite of lime,	12 decigrammes,
Pulverized sugar .	32 grammes,
Gum tragacanth .	10 decigrammes.

The hypochlorite of lime is triturated in a glass mortar, and a small quantity of water is poured upon it; it is then left to repose, decanted, and a second quantity of water added; the two liquids are filtered, and the gum and sugar added, so as to form a paste. This is divided into pastilles, weighing from 9 to 10 decigrammes. If it is desired to aromatize the paste, one or two drops of any essential oil may be added; the oil should be added to the sugar and gum, before the paste is formed.

Deschamps' pastilles.

Take of dry hypochlorite of lime	8 grammes,
Sugar	250 ,,
Starch . .	32 ,,
Gum tragacanth .	4 ,,
Carmine	15 centigrammes.

The pastilles should be made so as to weigh about 15 centigrammes; five or six may be taken in the space of two hours. By employing starch in the preparation of the lozenges Deschamps wishes to prevent the yellow colour which they would otherwise assume.

Deschamps' dentifrice for removing the yellow colour from teeth.

Take of dry hypochlorite of lime	20 centigrammes,
Red coral . . .	8 grammes.

Triturate well, and mix thoroughly.

This powder is employed in the following manner:—A new brush is slightly moistened, then dipped in the powder, and applied to the teeth. According to the author, a few days' use of this powder will produce a marked alteration in the appearance of the teeth, which will acquire a white colour.

S.

THE ECONOMICAL MICROSCOPE.—Mr. Pillischer, the well-known maker of microscopes, has recently invented a new moveable stage, remarkable for its great simplicity and complete efficiency. The motor apparatus consists of two flat metal bands, having a moveable joint; the shorter of these bands is attached to the left-hand corner of the stage, and to the longer a small handle is fixed. By means of this extremely simple contrivance an object standing in the field of vision can be moved in any direction with the greatest facility and nicety. Mr. Pillischer has adapted this apparatus to a microscope which he sells for £5. This instrument is furnished with an English quarter-inch object-glass, which by division makes also half and one inch glasses. These object-glasses possess good defining and penetrating properties. We have carefully examined the microscope in question, and find it to be an excellent instrument, fit for almost any description of scientific investigation; indeed it is a marvel of cheapness, the stage movement and the object-glass being worth, without the stand, the whole of the money.—*Lancet.*

SCIENTIFIC INTELLIGENCE.

Thallium.—There is hardly a chemist of eminence, British or foreign, at present in London, who has not examined with the greatest interest the specimens of the new metal Thallium, exhibited at the International Exhibition by its discoverer Mr. Crookes, the well-known chemist. Our readers are doubtless already well acquainted with all that has been published about this interesting discovery, but it will be as well to remind them that this metal was detected by Mr. Crookes in infinitesimal quantities in a very small portion of seleniferous sulphur residues by means of spectrum analysis. For the last year and a-half Mr. Crookes has been diligently searching for another source of this metal, and at last discovered some sulphur which contained about a grain to a pound. After a series of most elaborate analyses Mr. Crookes obtained several grains of metallic thallium, sufficient to prove that the metal was really a new element, perfectly distinct in all its properties, and not to be confounded with any known substance. Almost simultaneously M. Lamy, Professor of Chemistry at Lille, in working on some sulphur residues, found the same metal, but Mr. Crookes was before him in the field, and thus England has the honour of having discovered the last new element, and Mr. Crookes the glory of having his name handed down to posterity side by side with those of Davy, Balard, Wohler, and the illustrious few who have been the first to eliminate elements from their compounds. M. Lamy's almost simultaneous researches have confirmed the facts found out by Mr. Crookes. The metal appears to take greatly after lead in weight, colour, and properties. The source discovered by M. Lamy is almost inexhaustible, and Mr. Crookes has also found a supply of sulphur sufficient to yield thallium in comparatively large quantities. We hear that the Royal Society have granted Mr. Crookes the sum of fifty pounds to enable him to continue his researches, as hitherto the amount of metal obtained has cost its discoverer about five pounds a grain. In our next we shall give a full account of the reactions of this very interesting substance.

Ozone.—In a letter to Professor Faraday, Schönbein writes :—After many fruitless attempts at isolating ozone from an *ozonide* I have at last succeeded in performing that exploit; and have also found out simple tests for distinguishing with the greatest ease ozone from its antipode, "antozone." As to the production of ozone by purely chemical means, the whole secret consists in dissolving pure manganate of potash in pure oil of vitriol, and introducing into the green solution pure peroxide of barium, when ozone, mixed with common oxygen, will make its appearance, as you may easily perceive by your nose and other tests. By means of the ozone so prepared, I have rapidly oxidized silver at the temperature of—20° C., and by inhaling it produced a capital "catarrh."*

Tinctura Ignatiæ Composita.—In the *Amer. Jour. of Pharmacy*, Professor W. Procter writes :—Several physicians of this city (Philadelphia) having prescribed this preparation, and some apothecaries being unacquainted with the formula, Mr. Hubbell, who has introduced it into use, informs us that it is made by the following recipe, to be found in *Dorvault's Officine*, page 337, of which a translation is here given :—

"*Bitter drops* (*Gouttes Amères*).

Take of spirit of wormwood	1,000 parts.
,, Beans of St. Ignatius	500 ,,
,, Solution of carbonate of potassa	15 ,,
,, Pure soot	5 ,,

Digest these ingredients during fifteen days, and filter."

This formula is taken from that of Baumé. Dose, 1 to 8 drops in a bitter infusion, for flatulent colics.

The spirit of wormwood is directed by the same authority to be made by distilling together 1,000 parts of leaves and tops of wormwood, 1,000 parts of infusion of wormwood, and 3,000 parts of alcohol, 80 per cent., until 2,500 parts of distillate is obtained.

The preparation, as made by Mr. Hubbell, is a light brown tincture; hence, if the alcoholic extract of wormwood and alcohol is substituted for the spirit, as has been directed by one physician, a different preparation is obtained. A much nearer approach would be to use a spirit of wormwood made by dissolving good oil of wormwood in alcohol in the proportion of 20 drops to the fluid ounce of alcohol.

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* *Philosophical Magazine.*

Emplastrum Opii.—Having occasion to prepare ten pounds of this plaster, Professor Procter determined to adopt somewhat the plan proposed for the *U. S. Pharmacopœia* of 1860, yet not entirely the same. The quantity of plaster to be made was ten pounds avoirdupois. The following is the formula adopted:—

Take of Opium in mass, a quantity equivalent to 20 oz. of the powder,
,, Burgundy pitch, 30 ounces,
,, Lead plaster, 120 ounces,
,, Water and alcohol, of each a sufficient quantity.

Having dried one hundred grains of the crude opium, and ascertained its loss of weight, weigh out the quantity of opium equivalent to 20 ounces dry, cut it in pieces, and macerate it in two pints of water for 24 hours. Then express the liquid in a cloth strainer, and again macerate in two pints of water for 12 hours, and again express; mix the solutions and allow them to evaporate at a moderate heat. To the dregs of the opium add sufficient alcohol to make a semi-fluid mass (about half its weight); put it in a funnel with a sand diaphragm, and pour on diluted alcohol until the liquid passes with little colour or odour. Evaporate this tincture to a syrupy consistence, add it to the other liquid, and when the mixed extract has acquired the consistence of thick honey whilst hot, add it to the plaster and Burgundy pitch previously melted together in a suitable vessel, and stir them until a portion, on cooling, has the proper consistence.

This plaster is apt to be a little too soft at first, owing, apparently, to the absence of the insoluble portion of the opium, but it soon attains the proper consistence if the lead plaster used has been free from undecomposed oil, which appears to keep the plaster too soft. The use of such lead plaster and that which contains glycerine should be avoided in making this plaster.

Ferrated Elixir of Bark.—The following article, also extracted from the pages of our Philadelphia contemporary, is from the pen of Mr. James T. Shinn:—

"Among the pharmaceutical novelties recently brought to the notice of physicians, this preparation of iron, cinchona, and brandy, is one of the most agreeable, and consequently may prove very popular with patients.

"Where an after-dinner stomachic and excitant is required with the tonic effect of small doses of cinchona and iron, this Ferrated Elixir of Bark will answer admirably, one objection to its use, however, being the danger of engendering a taste for spirituous liquors.

"Not being aware of the publication of any formula for making it, the following is offered as having given satisfaction:—

Take of calisaya bark, in powder No. 60	four ounces.
Cinnamon water	two pints.
Caraway water	one pint.
Tincture of fresh orange peel	half a pint.
Alcohol	half a pint.
Brandy	two pints.
Syrup	three pints.
Pyrophosphate of iron (with citrate of ammonia), in scales	two ounces.

Mix the caraway and cinnamon water with the tincture of orange peel, and percolate the bark with the mixture. Dissolve the pyrophosphate of iron in the percolate, add the alcohol, brandy, and syrup, and filter if necessary.

"The formula for the elixir of bark is based upon one by A. B. Taylor, published in the *Jour. Pharm.* of 1859. When made in that manner, however, a precipitate occurs in a short time, rendering it turbid and unsightly. By treating the bark with an aqueous menstruum, and afterwards adding enough alcohol and brandy to preserve it, less of the cinchonic red is taken up, and the preparation remains clear much longer, though my experience is not yet sufficient to say that no deposit will eventually take place.

"The tincture of orange peel is made by macerating the finely divided fresh rind in deodorized alcohol, using a pound to the quart; it is a delicious flavourant, and keeps well, some now a year old being as good as at first. The object of mixing it with the aromatic waters is to remove the resulting cloudiness by percolation, and if the tincture is not on hand it would probably be preferable to rub the fresh rind with the sugar for the syrup, thereby furnishing a purely aqueous menstruum in greater quantity.

"The pyrophosphate is the most suitable of all the salts of iron for prescribing with preparations of Peruvian bark, on account of its not blackening with the tannin of cinchona and its freedom from chalybeate taste. A very convenient form in which to keep it is the solution of Dr. Squibb, as given in the *Journal* of 1860, page 37, with the addition of a few drops of oil of cinnamon or cloves, to prevent moulding: with this the syrup or ferrated elixir may be made easily and quickly.

"Some of the imported article in scales became, after a time, quite insoluble in water, and required the addition of ammonia for its ready solution. Although not darkened by infusion of cinchona, the colour deepens considerably on the addition of brandy, which contains tannin, derived from the cask.

"The ferrated elixir of bark, prepared as above, contains about one grain of pyrophosphate of iron and citrate of ammonia, and two grains of cinchona bark in a fluid drachm, and is very agreeable in taste and appearance. The proportion of iron may be increased without rendering it unpleasant."

Baume Tranquille.—Mr. W. C. Bakes, of Philadelphia, gives the following formula for this French preparation, which belongs to the much valued class of anodynes:—

Take of fresh Belladonna leaves.
,, Conium ,,
,, Hyoscyamus ,,
,, Stramonium ,, each ℥ iv. ʒ iii.
Opium, ℥ i.
Olive oil, Ovj.

"Mix the whole together, and boil over a slow fire, strain, and add

Oil of Sweet Marjoram,
,, Sage,
,, Wormwood,
,, Lavender,
,, Thyme,
,, Peppermint,
,, Rue, of each ʒ ix.

"As the fresh leaves are not always accessible, the *Baume* may be prepared from the inspissated juices or extracts, in the following manner:—

Take of Extract of Belladonna,
,, Conium,
,, Hyoscyamus,
,, Stramonium, each, ℥ i.
Aqueous Extract of Opium, ʒ ii.

"Dissolve the extracts in a little boiling water, and add

Olive oil, Oiiss.

Strain, and when cool add the same proportion of oils as in the preceding formula.

"This process has the advantage of being more expeditious, and furnishes a preparation of equal strength with that from the recent leaves.

"A remedy containing the same ingredients, and made in a similar manner, substituting glycerine for the olive oil, has been prescribed under the name of *baume anodyne*, as an application for ear-ache, which the pharmaceutist is frequently called upon to furnish; these preparations answer an admirable purpose, being both prompt and effectual."

REVIEWS

The Art of Perfumery, and the Methods of obtaining the Odours of Plants. With instructions for the Manufacture of Perfumes for the Handkerchief, Scented Powders, Odorous Vinegars, Dentifrices, Pomatums, Cosmetics, Perfumed Soap, &c. To which is added an Appendix on Preparing Artificial Fruit, Essences, &c. By G. W. SEPTIMUS PIESSE. Third Edition. London: Longman, Green & Co. 10s. 6d. 400 pp.

WE give an unabridged transcript of the title of this admirable treatise, because every branch of the subject specially indicated is connected with the business of the chemist and druggist, and because we cannot in our present number afford sufficient space for a description of the contents. The work should have a prominent place in the working library of every practical pharmacist, for its 400 pages are filled with interesting facts and valuable formulæ relating to the beautiful art of perfumery. There are numerous excellent wood engravings scattered through the beautiful printed text, and the whole volume is got up in a most tasteful style.

The Intellectual Observer. No. V. June. Groombridge and Sons. 1s.

THIS is a monthly review of natural history, microscopic research, and recreative science, containing articles by writers of high standing in the scientific world, and illustrative engravings of remarkable excellence and beauty.

In the present number there are long contributions on the Life Changes on the Globe, Beautiful Exotic Bees, Electro-plating, Parasites, the Angler-fish, Spectrum Analysis, a Peculiar Fossil Reptile, Magnetic Perturbations, the Geological value of Recent Occurrences, Work for the Telescope, Exhibition Tactics, Acari in Chemical Solutions, the Great Foucault Telescope, Dialysis, Unwholesome Food, the Ways of the Orchids, and the Hairless Men of Australia. Besides these separate articles, there are Reports of the Proceedings of learned societies, Gleanings from the International Exhibition, and numerous notes and memoranda on scientific subjects. Need we say, after this enumeration of the contents, that the *Intellectual Observer* is a most interesting and instructive periodical? The two coloured illustrations are, without exception, the finest specimens of colour-printing we have yet seen in a magazine. One shows eight species of beautiful exotic bees, and the other the microscopic appearance of a peculiar parasite. In another page we reprint the excellent article on Dialysis which appears in this admirable journal.

NEW BOOKS.

Darwin on Contrivances by which Orchids are fertilized. 9s. cloth.
Electrician, The. Vol. I. 4to. 10s. 6d. cloth.
Heath's Manual of Minor Surgery and Bandaging. Second Edition. 5s. cloth.
Hewett's Cocoa; its Growth and Culture, Manufacture, &c. 12mo. 1s.
Lowe's Natural History of Ferns. With Illustrations. Royal 8vo. 20s.
Meadow's Manual of Midwifery. Royal 32mo. 3s. 6d. cloth.

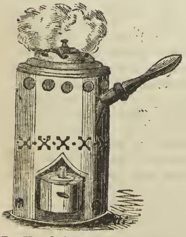
PUBLICATIONS RECEIVED.

Pharmaceutical Journal.—Intellectual Observer.—Exchange.—Grocer.—Geologist.—Practical Mechanic's Journal.—Civil Engineer.—Technologist.—Journal of Society of Arts.—Weldon's Register.—Medical Circular.—Scientific American.—American Journal of Pharmacy.—American Journal of Science.—American Medical Times.—Hunt's Merchants' Magazine.—American Druggists' Circular.—Boston Med. and Surg. Journal.—Journal of Rational Medicine.—Dental Cosmos.—Chicago Med. Journal.—Chicago Med. Examiner.—American Agriculturist.—Humphrey's Journal, &c. &c.

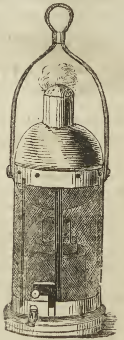
NOTES OF NOVELTIES

RIMMEL'S AROMATIC DISINFECTOR.

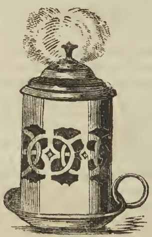
Some months since we gave a notice of Rimmel's Perfume Vaporizer, an ingenious apparatus for diffusing rapidly the vapour of any desired perfume throughout an apartment or building of large size. This was rather to be regarded as an article *de luxé* than one adapted for economical sanitary use. Recently Mr. Rimmel has issued a cheap form of the same instrument, which he terms an Aromatic Disinfector; it is designed to diffuse an aromatic compound fitted to overpower the bad odours of sick-rooms, ships, hospitals, &c. &c. The apparatus and its mode of action are very simple. A small pan half filled with water is heated by a lamp; when hot, a few drops of the aromatic compound are poured in, and this is rapidly diffused as soon as the water boils. The instrument is made in three forms: firstly, a small cheap contrivance for household use; secondly, a larger one adapted to hospitals; and thirdly, one in which the flame is surrounded by a cage of wire gauze, so that it can be suspended with safety in ships and other situations where the employment of an open flame would be attended with danger; these three designs are all shown in the following engravings—



For Hospital Wards, Dissecting-Rooms, &c.



For Ships and Steamers with safety lamps.



For Household use and Sick Rooms.

The theory of disinfecting by means of aromatic substances is not a new one. From the earliest times fragrant resins and woods have been burned at sacrifices to counteract the smell of burning flesh, or at funerals to overcome the effluvia arising from dead bodies. At a more recent period, perfumes were in use to prevent infection, as may be seen from the recipe books of the 16th and 17th centuries. It is not long since the practice of spreading rue in front of the judges' bench, to preserve them from the jail fever, has been discontinued; and there are many who can still remember some of the old medical practitioners carrying on the top of their walking stick a scented cassolette, which they held up to their nostrils occasionally when visiting contagious cases.

It may be said that the use of aromas merely serves to cover one smell by means of another; but it may be replied that the fine effluvia which give rise to noxious smells are so small in quantity that it is by no means certain that they are not destroyed by volatile emanations of a fragrant character; and that when we find an unpleasant smell is replaced by one of a pleasant character, we may fairly assume that the former has been destroyed, or at all events so far modified as to lose its more injurious properties.

INSECTICIDE POWDER.

This useful powder, which is now coming into very general use, from its peculiarly effective power in driving away insects, especially those which are parasitic on the bodies of men or animals, is shown in the various stages of manufacture by John Zacherl, in the Austrian department of the International Exhibition. Class II., 169.

The *Pyrethrum roseum Caucasicum*, a native of Asia, bears compound flowers, resembling somewhat those of the daisy or cineraria. The outer florets of each flower are rose-coloured, the central ones, like those of the wild daisy, are small, tubular, and yellow. These central florets are separated from the flower-stalk and large external rose-coloured florets, and ground, in which state they constitute the well-known Persian insect powder.

Several effective and convenient modes of applying this powder have been registered or patented in this country, one of the most efficacious being Dumont's application of the small india-rubber balls, by which the powder can be conveniently puffed into crevices or cracks that would otherwise be reached with difficulty. The powder itself is a free article of commerce, and may be purchased in bulk. Its properties are remarkably peculiar, and it is not known on what principle they depend; the plant is certainly not poisonous, and it would be interesting to know if any of the other species of the rather numerous genus *Pyrethrum* possess the same properties. We have several in our own country; the *Pyrethrum inodorum* is found on sand or chalk, and the *Pyrethrum parthenium* is common even on roadsides in the neighbourhood of London; both are known under the name of feverfew. Another species grows on the sea-coast. It would be worth the time and trouble bestowed to give them a trial as insecticides.

THE MONTH

Poisonings.—We have hitherto given under this head brief reports of poisoning cases of every description, including those having no special claim to the consideration of the pharmacist. To make room for more important matter, we intend in future to disregard all cases which do not present any novel features, but which are only fresh versions of oft-told tragic stories. We shall give prominence to cases of accidental poisoning, because they reveal the frightful results of carelessness, and suggest the general adoption of some of those beautiful mechanical safeguards which we have so strongly recommended in former numbers. We shall also notice cases of suicide and murder by rare poisons, and all ordinary cases which bring members of the trade before the public, either as vendors of the means of destruction or as medical witnesses.

By an overdose of Laudanum.—The *Greenock Advertiser* states that on Saturday, May 17th, about one o'clock, Dr. J. H. Bryson was found sitting in a chair in the back room of his dispensary, 71, Main-street, Cartsdyke, in a state of insensibility, in consequence of his having taken an overdose of laudanum to relieve the pain occasioned by a spasmodic affection to which he was subject. Dr. M'Fie was instantly called in, and, after administering an emetic, had Dr. Bryson removed to his residence in Hill-street, where he received unremitting attention from Drs. Marshall, Henry, and Stewart, and the house-surgeon of the infirmary. About ten o'clock on Saturday night he had so far rallied as to be able to speak; but about midnight he began to breathe heavily, and gradually sank until three o'clock on Sunday morning, when he expired. He was about fifty years of age, and has left a widow and five children.

By an Embrocation administered in mistake.—Mr. George Corsham, a gentleman well known, it is said, in commercial circles, residing at No. 26, Lower Eaton-street, Belgrave-square, was accidentally poisoned under the following melancholy circumstances. The deceased, being a widower, resided by himself, at the address stated, but being subject to fits, a young woman, named Harold, was engaged to attend upon him. Mr. E. Davies, of Upper Belgrave-place, his medical attendant, sent him some medicine on Thursday night to be taken internally, and also an embrocation; and on Friday morning at seven o'clock deceased declared that he was poisoned, when it was found that Miss Harold had made some mistake in the medicine, and administered the wrong one. Mr. Foote, chemist, promptly attended with the usual remedies, but all was of no avail, as the unfortunate gentleman died in dreadful agony.

By Rat Poison.—On Thursday evening, May 22nd, Mrs. Vyse, of Ludgate-hill, attempted her life by cutting her throat. In an adjoining room her two children were found dead, and the supposition is that they had been poisoned by their mother, who, it appears, in the early part of the day had purchased of Mr. Keating, chemist, of St. Paul's-churchyard, some poison, assigning as a reason the necessity of destroying the rats with which the house was said to be infested. The inquest was held by Mr. Serjeant Payne at the London Coffee House, when the sale of the poison (which proved to be "Battle's Vermin Killer") to Mrs. Vyse was proved by Mr. J. N. Taylor, Mr. Keating's assistant. The *post-mortem* examination of the bodies was made by Mr. W. S. Savory, assistant-surgeon at St. Bartholomew's Hospital, who stated that all the organs had a healthy appearance; he had not made any chemical analysis of the contents of the stomach, thinking that in a case of so much importance it was the duty of a professional chemist to undertake the analysis. The inquiry was accordingly adjourned until Friday last, when Mr. John Attfielde, demonstrator of practical chemistry at St. Bartholomew's Hospital, gave evidence to the effect that he had examined the contents of the stomachs of the two children, and had found strychnine, and that he had also examined purchased samples of "Battle's Vermin Powder," which appeared to consist of starch, sugar, Prussian blue, and strychnine, the latter amounting to 10 per cent. Mr. Savory said that when strychnine was given in solution it would operate in from four minutes to a quarter of an hour; but if in a solid form, it would take from ten minutes to twenty minutes, or even half an hour. After the coroner had explained that the question with regard to the sanity of the person implicated could not be gone into then, the jury retired, and in a quarter of an hour returned into court, when Mr. Morris, the foreman, said—"It is a painful duty that I have to perform. I have to announce that the jury have come to the unanimous conclusion that Annie Howard Vyse and Alice Kate Vyse came to their deaths by poison administered to them by their mother, Ann Cornish Vyse." The witnesses were then bound over to prosecute.

The Manchester Tragedy.—The mystery of the children's death has not yet been cleared away. At the final examination of the prisoner Taylor before the magistrates, Messrs. Winterbottom, McKeand, and Heath, surgeons, and Mr. Hudson, analytical chemist, gave evidence by which it was clearly established that in none of the three cases was death the result of natural causes. Yet no definite conclusion could be arrived at as to the means by which death had been occasioned. Professor Taylor, like the other professional witnesses, could only hazard a speculation, and that was that the children had been either suffocated or destroyed by some poisonous vapour, such as that of chloroform. These mysterious deaths have called forth the following excellent remarks from our medical contemporary, the *Lancet* :—

> There is a painful check to our utility in the declaration made by Dr. Taylor, that he has been unable to detect the cause of death in the children supposed to have been murdered at Manchester. Neither organs nor tissues yielded to the anatomical experts any indication of such change as might be induced by physical violence or narcotico-irritant poison. There was no peculiar odour; no appearance of asphyxia. They were wrapt in the sleep of death, but the agent of his bidding was not visible. The most cunning search of chemists failed to detect any subtle alkaloid or known poison. It must be remembered that the means of detection of the alkaloids are becoming daily more certain. Since the trial of Palmer, the statements of Mr. Rodgers, Mr. Herapath, and Dr. Letheby, have been fully verified; and not only can the most minute fraction of a grain of strychnine be detected, but the comparative permanence of the alkaloid on the decomposing tissues has been demonstrated. Moreover, the physiological test has proved most delicate and accurate; and the effect produced upon animals by the administration or application of a small quantity of the contents of the stomach, shows quickly what is the nature of the organic poison to be sought. Similar conclusions have been established in regard to nicotine by Melsens,—a fact which cannot be too widely known. Meanwhile poisoning by noxious and volatile vapours, such as chloroform, is suggested as a new field of crime. We are extremely indisposed to believe that such a thing could be done as the easy asphyxiation of children by chloroform. At any rate, it is not in all cases that chloroform would cause death, and it is doubted whether the supposition will be found to be correctly based when further circumstances shall be disclosed.

By Oil of Vitriol.—An inquest was lately held at the London Hospital touching the death of a child, aged three years, from injuries received through drinking and spilling over his person a quantity of oil of vitriol. Mr. James M'Clean, a master butcher, said that he had taken the premises at No. 45, Church-street, Mile End, and while he was engaged in putting up the fixtures, the deceased, who was his son, was playing about the shop. A large saucerful of pure vitriol had just been brought in for the cleansing of the gas-pipes, and was laid on the counter, when his attention was called to something outside the shop. Almost immediately afterwards he heard a loud scream, and upon looking round he saw that the deceased had taken a drink of the vitriol; and in trying to place the saucer back on the counter, had upset the whole of its contents over his face and chest, inflicting extensive and frightful injuries. Witness forthwith conveyed the unfortunate child to the London Hospital, where Dr. M'Kenzie did everything possible for his relief, but he died in a short time in dreadful agony. Verdict—"Accidental death."

By Laudanum.—A single lady, aged fifty-two, residing at Hampstead, lately committed suicide under peculiarly distressing circumstances. She had been an invalid for the last forty years, being subject to an ailment of so acutely painful a nature that she could only allay her sufferings by means of doses of laudanum. Shortly before her death she was found speechless in bed, and she pointed to a paper on the table, on which was written the following in her handwriting:—"I can bear my sufferings no longer, and I have taken the laudanum to end them and my life together—L. Y." Dr. Evans, of the Hampstead-road, was forthwith in attendance, and he applied all the usual remedies, but without avail. The poor lady had swallowed an ounce of the poison.

By Sulphuric Ether.—An Italian named Gaetaus de Lauretis being about to be arrested on a charge of felony, committed suicide last week at his lodgings, in Charlotte-street, Fitzroy-square, by swallowing a quantity of sulphuric ether. Mr. Shaen, a solicitor, and a young woman named Butler, witnessed the insane act. After drinking the poison, he threw himself on the bed, and almost instantly expired.

A French Quack.—The somewhat too mild punishment of two years' imprisonment and a fine of 600 francs, has been awarded by the Correctional Tribunal to a miscreant of the name of Jamin, for illegally practising medicine, and thereby causing the death of a Madame Foncault, who had placed herself under his care. The accused, an uneducated man, by occupation a Burgundy vine-dresser, was what is commonly known in France as a *rebouteux*, and moreover a cancer-curer. He began to practise in his neighbourhood, but it would appear without much success, as at Joigny and Auxerre his medical doings continually brought him into collision with the authorities. He therefore changed his ground, and, coming to Paris, associated himself with a regularly qualified (*proh pudor !*) physician, in order to evade the law, filling the newspapers with wondrous details of his rapid cure for cancer. His victim, Madame Foucault, the wife of a rich landowner in the Charente Inférieure, was suffering from cancer in the breast, and, attracted by his specious advertisements, applied for the promised relief. Jamin's charges were exorbitant. He demanded 18,000 francs if he attended the lady in her own county, or 7,000 francs if at Paris. She preferred the latter arrangement, and placed herself under his treatment in January last. His attendance continued up to the 4th of March, when she suddenly expired. The suspicions of her attendants that she had been poisoned led to the performance of an autopsy, when the latter fact was verified, and accounted for by the discovery of large quantities of orpiment lodged in incisions purposely made in the diseased breast. Jamin was at once arrested, and of course condemned. The physician who had countenanced the charlatanry of this ignorant quack, declared that the secret of the remedy had never been communicated to him. He very properly got a severe rebuke from the President.

Law of Partnership.—The Bill which Mr. Scholefield has just introduced into the House of Commons proposes to allow persons lending money to traders on the terms of receiving a share of profits as interest, and registering the transaction at the Joint-Stock Companies' Registration-office, not to become general partners, but only "limited partners." Only the general partners will be liable to bankruptcy, but in case of such bankruptcy, limited partners are not to be paid till after the other creditors; and in case of bankruptcy within 12 months after their ceasing to be limited partners, they are to be liable to refund money repaid to them within that twelvemonth, for satisfaction of the claims of creditors who were such while these persons were limited partners. The Bill also proposes that the names of partners in a firm are to be registered if the title of the firm does not contain them all, or contains the name of a person not really in the business.

United Society of Chemists and Druggists.—We observe that the certificate of membership is now being issued. The design is most artistic, and we trust will become the symbol of unity throughout the trade. We are requested to state that the certificates are issued in rotation according to priority of application. The current year's membership fee, 5s., must be accompanied by four extra stamps to cover expense of rolling and postage.

Conversazione of the Pharmaceutical Society.—The Society's rooms were thrown open on Tuesday evening, the 20th of May, for the usual annual conversazione, and a large assemblage of visitors responded to the invitations which had been issued by the President and Council. Among the guests who thus honoured the Society were several eminent foreign chemists and scientific men, who have been attracted to this country by the Great Exhibition. Upon the walls and tables of the reception-room were arranged some interesting specimens of native weapons, etc., from Australia, kindly contributed by Mr. A. B. Squire. Several valuable pictures, including a remarkably fine portrait of Her Majesty, and another of Sir James Clark, were kindly furnished by the President and Messrs. Vokins. Some fine busts by Mr. F. Butler were arranged on pedestals, and contributed to the decoration of the rooms. Messrs. Jackson and Graham also furnished some fine bronzes, and Messrs. Phillips some handsome specimens of Majolica ware. One of the prominent objects of attraction was a magnificent crown of crystallized acetate of rosaniline (magenta dye), for which the Council were indebted to Messrs. Simpson, Maule, and Nicholson. Around one of the principal rooms was arranged a large collection of ferns and algæ from Australia and Japan, beautifully preserved and mounted by Mr. Jardine, who kindly lent them for the occasion. The Royal Botanic Society also contributed a considerable number of living specimens of medical and economic plants, many of which were in flower, including the *Podophyllum peltatum*. Mr. Ward furnished some interesting botanical specimens, and also one of his closed cases. Two fine salt-water aquaria, from Mr. Lloyd, were also provided. The Testimonial which had been presented to Professor Bentley on the previous evening was displayed in the rooms, and attracted great attention. In the Laboratories, Mr. Ladd excited considerable interest by throwing the electric light upon some soap-bubbles, which were blown with a peculiar solution, recently described by M. Plateau, made with pure oleate of soda and glycerine. In a darkened room Mr. Ladd also exhibited a number of experiments with some powerful induction coils. There was an unusually good display of fine microscopes, including a number of binoculars, for which the Council were indebted to Messrs. Ross, Smith and Beck, and Powell and Lealand. Dr. Gladstone also kindly contributed a very curious microscope in silver, which was made for the late Duke of Marlborough, and which, by the side of the new binocular, illustrated the extraordinary improvement effected in this instrument within the last few years. Under one of the binoculars Mr. Atfield showed some poison-proof acari living on strychnine, which attracted considerable attention. The Council were also indebted to Dr. Müller for several ounces of the chloride of the new element rubidium. Mr. Crookes also contributed a specimen of the sulphide of thallium, a new element recently discovered by him in some samples of native sulphur. Some collections of minerals were exhibited by Mr. Wright, Mr. Gregory, and Mr. G. Knight. Dr. Crace Calvert furnished a specimen of crystallised carbolic acid; Mr. Fewtrell, specimens of the blue compound recently obtained by Dr. Letheby by the electrolysis of sulphate of aniline; Mr. Manthorp, of Yarmouth, some curious Chinese plasters; Mr. Morson, some Chinese drawings, illustrating the downward career of the opium-eater; Mr. Tilden, a specimen of pure crystallised benzol; Dr. Oppenheim, a specimen of peppermint salt, from Japan; Mr. F. Bassford, some specimens illustrating the artificial production of silk; Dr. Edward Smith, the potash-box and spirometer used in his experiments on respiration; Dr. Liharzik, a set of models illustrating the growth of the human body; Mr. Larkin, some models of crystals. There were many other beautiful and interesting objects exhibited, and all the guests of the Pharmaceutical Society seemed thoroughly delighted with the entertainment provided for them.

Chemical International Banquet.—The English chemists entertained the chemical jurors and other distinguished chemists at present visiting London at a banquet given at the Trafalgar, Greenwich, on Tuesday evening last. The chair was taken by Dr. Hofmann, President of the Chemical Society, and the company consisted, among others, of Professor Faraday, the Master of the Mint, M. Balard, M. Pelouze, Professor Schrötter, Dr. Percy, Professor Fehling, Mr. Walter Crum, Professor Daubeny, Professor Wurtz, Dr. de Mussy, Professor Regnault, M. Peligot, Professor Williamson, Professor Baumbaner, Professor Frankland, Le Viscount de Villa Maier, Dr. Adling, Dr. Stenhouse, Mr. Grove, Mr. Warren de la Rue, M. Woskrescenski, M. Stas, Professor W. A. Miller, Baron Shenard, Dr. Atkinson, Mr. G. Wilson, Mr. Maskelyne, M. Persoy, Professor Forchammer, Professor Brodie, M. D. Campbell, M. Daubrée, Mr. Smee, M. Barreswill, Mr. Atfield, Professor Anderson, Professor Roscoe, Mr. Young, Professor Piria, Dr. Müller, Professor Sobrero, Professor Mennier, Professor F. C. Calvert, Mr. Abel, Dr. Normandy, Professor Lourenzo, Professor Chandelon, Professor Redwood, Mr. Morson, Mr. Perkin, Dr. Noad, M. Kuhnheim, Dr. Buckton, Dr. Gilbert, Dr. Lieben, Dr. Price, M. Barral, Mr. Hiesch, Professor Herapath, Dr. Marcet, Dr. Longstaff, Mr. Hanbury, Mr. Field, Dr. Bence Jones, Dr. Bernays, Mr. J. P. Gassiot, Dr. Gladstone, Dr. Letheby, Dr. Lyon Playfair, Mr. Porret, Mr. T. Taylor, Mr. Warrington, Dr. Dexter, Professor Fremy, M. Hulot, &c.

Miscellaneous Jottings.—M. Acar, chief pharmacien to the Emperor of the French, died on the 21st ult. A very touching discourse was delivered at his funeral by M. Conneau, principal physician to the Emperor.

Some melancholy cases of hydrophobia have lately excited considerable alarm in France. The death of a lady of an eminent physician, under very sad circumstances, has been recorded in the *Gazette des Hôpitaux*.

Sir Roderick Murchison has had a *soirée* in Belgrave-square, at which a great many foreigners of distinction now in London for the International Exhibition were present.

The *Gazette du Midi* states that a deputation from the merchants and manufacturers of Marseilles lately waited on the Emperor to explain to him the injury caused by the tax on salt used by manufacturers, particularly those of chemical productions and of soap.

A bill will be introduced to exempt the salt used in manufactures from the duty now imposed on it.

Chloride of lime has recently been employed by Professor E. Kopff for horticultural purposes. Plants sprinkled with a weak solution are preserved from the ravages of insects. Fruit trees may be protected from vermin by forming the chloride into a paste, and applying a narrow circle or ring of it upon the trunk of the tree.

The *Lancet* recommends common spirits of hartshorn or ammonia as a test for poisonous green paper-hangings. On application, the beautiful but dangerous green turns to a decided blue.

A new green for confectionery, which may be substituted for the poisonous colouring now much used, is noticed by the *Journal de Pharmacie.* It is composed of saffron and indigo, and, in the proportion necessarily used, may be considered innocuous.

A deputation to present a memorial concerning the regulation and purification of the Thames waters, lately had an interview with Secretary Sir George Grey at the Home Office. The memorialists solicit the Government to issue a commission of inquiry, or to cause full inquiry to be made into the condition of the Thames and its tributaries, specially for the purification of the Thames waters for the use of the metropolis and of the towns in the Thames district, as well as the amendment of the health of the population which adjoins them.

REPORT OF THE PHARMACOPŒIA COMMITTEE OF THE GENERAL MEDICAL COUNCIL.*

The Pharmacopœia Committee, appointed by the General Medical Council, beg to report to the Council that the manuscript of the "British Pharmacopœia" is now completed, and most of it ready for press. Until lately the Committee confidently expected to have on this occasion laid a copy of the whole Pharmacopœia in proof on the Council table, but difficulties of a legal nature, from which the Council alone can relieve them, arose about two months ago, and have prevented them in the meantime from continuing their labours.

The Pharmacopœia Committee was appointed by the Council in the first session of the Council, towards the end of November, 1858. In conformity with the plan for their proceedings approved by the Council, they associated with themselves members from the three Colleges of Physicians and the Pharmaceutical Society of Great Britain. Subcommittees having been then established at each of the three capitals, they commenced their duties in February, 1859.

It was, in the first instance, resolved that the Pharmacopœia should consist of two parts and an appendix—the First Part to consist of the Materia Medica List; the Second Part, of the Preparations and Compounds, and the Appendix, of such articles as are not themselves used in medical practice, but which are employed for the chemical processes and tests of the Pharmacopœia.

I. The Materia Medica List contains every substance, whether obtainable in ordinary trade or prepared by chemical processes. In the Second Part, which the Committee have found, on careful inquiry, to be so far approved in practice as to be entitled to a place in a national Pharmacopœia, not a few remedies contained in the Pharmacopœias of the three Colleges of Physicians have consequently been removed, and many new ones have been adopted. Under each article of the Materia Medica List the Committee have given —1. A Latin pharmaceutic name, by which it will be prescribed, an English synonym for use in describing the processes in Part Second, and its chemical symbol, if it be a substance of definite constitution. 2. Its definition, together with its botanical reference, if it be a plant, or obtained from a plant, and also a reference to a correct figure of the plant; and in all cases, when possible, a statement of the quarter whence the article is derived. 3. The characters by which it may be distinguished from all other articles in the establishment of the druggist. 4. The tests by which it may be known to be free of impurities or adulterations. 5. The officinal preparations of which it is an active ingredient.

II. The Second Part, or the Preparations and Compounds, comprises processes for all forms for the administration of medicines, for the extempore prescriptions of practitioners, or for obtaining articles in the Materia Medica List by chemical operations.

The Committee took into consideration the question, whether the transference of the manufacture of many chemicals from the hands of the druggist into those of the manufacturing chemist, might not render it practicable to withdraw a great part of the chemical processes from the Pharmacopœia. But on mature examination it was resolved that they should be retained.

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* Read at the meeting of the General Council of Medical Education and Registration.

The Appendix needs no explanation.

The Pharmacopœia thus organized contains 322 articles of the Materia Medica List, 380 processes, Galenical and chemical, and 49 substances belonging to the Appendix.

In order to settle what articles and processes should be introduced, as well as various other general or preliminary matters, it was soon found necessary to hold a conference of Sub-committees, consisting of three delegates from each.

The conference met in London in May, 1859, and having settled, as far as could be done at the outset, the articles and processes to be admitted, they divided each part into three equal portions, and assigned the charge of one portion of each part to the three Sub-committees.

The portions undertaken by each sub-committee, as they were brought to maturity, were submitted to both the other sub-committees, and after this revision were corrected, where necessary, by that which originally undertook them.

It was found indispensable, however, to hold another conference of sub-committees last year, in order to adjust many points which could not be settled by correspondence.

This meeting was held at Edinburgh in September last. One important result of the conference on that occasion was, that the whole chemical tests in the Materia Medica List, and the chemical processes in the Second Part, were sub-committeed to two of the members, who twice met in Dublin in October and December last, to make the necessary experimental investigations.

The meetings of all kinds which have thus been held for the business of the Pharmacopœia have been the following:—The London sub-committee has met 149 times; that of Edinburgh, 105 times; that of Dublin, 131 times. The meetings of the two conferences were 10 in number, and the Chemical sub-committee in Dublin met 18 times.

The Committee are able to state that the whole chemical and Galenical processes of the Pharmacopœia, with the exception of some old-established ones which admit neither of doubt nor improvement, have been subjected to experiments, some of them by more than one sub-committee.

Important differences between the existing Pharmacopœias of the three Colleges of Physicians rendered it imperative on the Committee to settle several difficult questions, in order to effect a uniform system for the three divisions of the kingdom.

The first was the system of weights and measures. In all the existing Pharmacopœias the apothecaries' measures have been adopted or deduced from the "imperial standard" of ordinary trade in this country; and in the last edition of the Dublin Pharmacopœia in 1850, a similar change was effected in the apothecaries' weights. The Committee resolved to carry through the change begun in the Dublin Pharmacopœia by assimilating to one another in value the smaller weights and smaller measures. Adopting the imperial pound and ounce, they have divided the ounce weight of 437·5 grains, as all the Pharmacopœias have previously divided the corresponding ounce measure, into the convenient subdivisions of pharmacy; so that the drachm is the 8th part and the grain the 480th part of the ounce.

The weights and measures thus correspond with one another throughout all denominations under a pound. It will be seen that in this system the drachm and grain are about one-eleventh less than they were; and that the drachm is nearly double, and the grain about an eleventh less, than the drachm and the grain of the imperial standard. The Committee, however, satisfied themselves that no material inconvenience could arise from the latter circumstance, because the imperial drachm and grain are little used in any trade; and as to the alteration of their value in pharmacy, the inconvenience will be little, and only temporary, because a proportionate change has been made in every process of the Pharmacopœia in which it appeared to be important; nor will any inconvenience arise to the physician or surgeon in their prescriptions, as the difference of an eleventh of a dose is a matter of no moment in regard to any remedy.

The Committee did not adopt this system without taking into account the strong recommendations they received, both in and out of the medical profession, to show an example to the country at large, by adopting a decimal system of weights and measures. The Committee were strongly impressed with the great advantages of such a system, both in pharmacy and physic; but they were not prepared to say what decimal system should be adopted; and, on the whole, they were of opinion that the Legislature, and not the General Council, should take the lead in this matter.

Another important difference between the existing Pharmacopœias occurs in the nomenclature of the articles of the Materia Medica. As numerous changes were thus inevitable, the Committee have not hesitated to add others, whenever they could by doing so either consult the convenience of the pharmaceutic chemist and medical practitioner, or put an end to a positively false description.

A third and more serious difference exists amongst the Pharmacopœias of the Colleges, in the strength of preparations bearing the same or similar names. In this branch, too, of their duty, as amalgamation involved numerous changes in one division or another of the country, the Committee did not hesitate to make further changes, when they could thus secure the ultimate convenience of all members of the medical profession, as well as the safety of the public. The trouble to which practitioners will consequently be put for a time, will be partly compensated by greater simplicity and convenience for the future. It occurred to the Committee that all risk to the public would be avoided, and extreme facility to the practitioner attained, by so framing the formulæ for the preparations and compounds, that all articles under one Galenical form should admit of being fitly prescribed in the same dose. Difficulties of detail have prevented this convenient system from being carried out to the full extent; but it has been attended to as far as possible, and increased facility in prescription will be found to have been thus attained.

The Committee must here add, that it will be incumbent either on themselves or on the General Medical Council to publish a warning to all pharmaceutic chemists and druggists that, on the publication of the Pharmacopœia, it will be impossible for them to discharge their duties to the public safely unless they destroy or alter all pharmaceutic preparations they may have in store, which have been made according to present formulæ, and the strength of which is altered in the new Pharmacopœia. And a further caution must be given to all medical practitioners, that it will be hazardous for them to exercise their profession without making themselves acquainted with all changes made in the strength of officinal preparations, which changes will be carefully noticed under each article.

If the Council take into account the great extent of inquiry which the Committee have had to undertake, the necessity of consulting the opinions of three separate sub-committees, far distant from one another, and the prior demands of a professional nature on the time and attention of all their members, no surprise can be felt that a period of three years and a half has been required to complete the work entrusted to them.

The performance of numberless experiments, the expense of sub-committee meetings, of two conferences of the united sub-committees, of extensive conjunct investigations in Dublin, the remuneration of secretaries, and sundry other less important charges, have involved heavy outlays and obligations, which will be much increased presently by the charges for printing and publishing the Pharmacopœia. After attentively considering in what manner the probable cost may be defrayed at least charge to the members of the medical profession, the Committee determined that the property of the work should be retained in the possession of the Medical Council.

Here, however, they have encountered a difficulty which has occasioned unforeseen delay. A doubt arose both as to the Pharmacopœia Committee having the legal right to make contracts with printers and others in the name of the Council, and as to any proceeding on the part of the Committee being sufficient to secure the copyright of the work in the Council.

As instructed by the legal adviser of the Council, the Committee are inclined to think that the Pharmacopœia ought to be laid before the Council at a general meeting, and formally sanctioned by them; and contracts must be entered into either by the Council itself, or by parties to be duly authorized to act in the Council's name.

Other legal questions have also arisen as to the copyright of the Pharmacopœia, and the power of the Council to prohibit invasion of it either wholly or partially.

On all these doubtful points it was found necessary to take legal advice. This has been done with the sanction of the President of the Medical Council, and the Committee hope to place the result before the Council at one of its early meetings.

Another question has also arisen, which involves essentially the nationality of the Pharmacopœia. The Medical Act does not contain any statutory injunction, that, after the publication of the Pharmacopœia, the Pharmacopœias of the Colleges of Physicians shall cease to have effect, and that pharmacy shall be practised according to the formulæ of the "British Pharmacopœia."

Now the London Pharmacopœia is enjoined as the standard throughout England by an order of Her Majesty's Privy Council; the Dublin Pharmacopœia is, by statute, imperative as the standard in Ireland; and in Scotland the Edinburgh Pharmacopœia is, by use and wont, as exclusively the standard, although it was never made so by statute or charter.

The Council will therefore perceive that there will be nothing to hinder any of the Colleges from republishing its Pharmacopœia, and nothing to prevent pharmaceutic chemists, apothecaries, and others, from using either that or the latest edition of the same, except public spirit and private discretion. It will, therefore, be for the Council to determine whether the "British Pharmacopœia" should issue as a discretionary guide, or should be fixed as the national standard by the Legislature. And should the Council resolve to adopt the latter alternative, which seems to be the more advisable course, the Committee have to add that no time should be lost in obtaining a short Act for the purpose during the present session of Parliament.

R. Christison, Chairman.

NOTES AND DISCOVERIES

Colours for Show Bottles.—Having been frequently requested to publish reliable recipes for show-colours, we publish those given in the May number of the *Amer. Druggists' Circular*, which are said to have been tested by the clever editor and his friends, and are warranted to stand the test of time. In all cases the bottles should be kept well stoppered with well ground glass stoppers, or, if these cannot be had, with cork stoppers covered with paraffin. It is not so much the light as the volatilization of an important ingredient that destroys these colours in many instances.

BRIGHT RED.—℞. Cochineal, ground, 1 ounce. Boil with one pint of water, replacing that which evaporates. Towards the close add cream tartar, ½ ounce; alum, 1 ounce; and when cold, oil of vitriol, 1 ounce, mixed with half a pint of water.

PURPLE TO PINK.—℞. Fuschsin diluted with spirit, as desired.

GREEN.—℞. Bichromate of potassa, 6 ounces. Dissolve in three pints of hot water in a glass flask, then add oil of vitriol, 2 ounces, previously diluted with 10 ounces of cold water, and when again boiling add gradually alcohol, 4 ounces, or as long as the colour changes. Dilute *ad libitum*.

LIGHT GREEN.—℞. Sulphate of copper (recrystallized), muriatic acid (free from iron), water, alcohol, of each, q. s.

VIOLET TO PURPLE.—To the green acid solution of sulphate of chromium add strong solution of ammonia, and filter.

YELLOW.—℞. Bichromate of potassa, muriatic acid, water, of each, q. s.

BROWNISH RED.—℞. Persulphate or perchloride of iron, acetic acid, alcohol, water, of each, q. s.

BLUE.—℞. Sulphate of copper (recrystallized), liquor ammoniæ, alchohol, water, of each, q. s.

CURIOSITIES OF LEECH CULTURE.—Many of those who have assiduously cultivated the leech have amassed handsome fortunes, the trade being very remunerative. A prosperous merchant, away in some far district of Poland or Wallachia, will keep some two or three hundred of the inhabitants of his district in full employment collecting for him, paying them on the best of all plans, according to their labour—viz., so much a dozen, according to the age and quality of the leeches which they bring to the depôt. The animals must be all gathered before the heat of the day sets in, and at once carried home to the capacious reservoirs provided for their reception, where they are at once counted and paid for. Packed in clay or in bags, they are at certain seasons dispatched by fleet conveyances to Marseilles, or direct to Paris, change of horses on the way being insured, when necessary, by liberal payments. The mode of packing leeches for transport is much the same in most of the breeding districts. Some are placed in boxes—first a layer of moist white clay, then a layer of the little animals, and so on till the chest is full. Some of the merchants pack the leeches in bags as soon as they are taken out of the marshes. Each of these bags contains about sixteen pounds weight, and it is necessary that they should be hung up for a period till the water is all drained out of them, and then the animal rolls itself up into a kind of ball, and lies in a semi-torpid state till it is, perhaps, revived on its journey by a dip into some half-way pond. The boxes or bags containing the leeches are carried in light waggons divided into necessary compartments. Relays of horses and drivers are always kept in readiness at the various stages of the journey; but, notwithstanding the greatest care may be taken in their transport, immense numbers of the animals are killed. Severe frost or great heat is equally fatal to them.—*Once a Week*.

JAPANESE DOCTORS.—In a conversation which the Russian Ambassador had with the Japanese, he observed that it was to be regretted that their Government had not sent over earlier enlightened envoys like themselves, who might have imparted to their countrymen the priceless benefits of our superior civilisation. When the interpreter communicated this to his master, great was the surprise and indignation. "What!" he exclaimed, "because you blow your noses and make your bows and curtsies differently from us, do you suppose yours to be the right way, ours the wrong? We pay our doctors as long as we are well, and stop their pay when we fall ill until we are cured. You begin to pay them when you are ill, and fee them on till you are cured; and this is one of the many instances of your boasted superior civilisation."—*Lancet*.

TRADE REPORT.

In chemicals rather more business has been done in several articles, at in many cases a better price. Large sales in Iodine have been made at 5½*d.* to 6¼*d.*, but market is now dull at 5½*d.* to 6*d.* Sales in Tartaric Acid have been made at 1*s.* 8*d.* A good business has been done in Chlorate of Potass at 11½*d.* More sales in Oxalic Acid, at 9*d.* to 9½*d.* for best quality. Bichromate of Potass remains quiet, at 8¼*d.* to 8½*d.* Prussiate of Potass continues dull and nominal, 12½*d.* Soda Ash is quiet, at 2⅛*d.* to 2¼*d.*; a fair business done. Sulphate of Quinine at 7*s.* to 7*s.* 4*d.* for pelliters. More doing in Cream of Tartar, at £6 7*s.* 6*d.* to £6 10*s.* Flour of Brimstone is dull at 13*s.* 6*d.* to 15*s.* 6*d.*, according to quality. Sulphate of Copper only in retail demand, at 32*s.* to 33*s.* Refined Saltpetre is dull at 45*s.* to 46*s.* Several sales have been made in Spirits of Turpentine, at 73*s.* 6*d.* to 74*s.* 6*d.* for American, and 70*s.* 6*d.* to 72*s.* for French. Linseed Oil is quieter, at 39*s.* in London and 38*s.* 3*d.* in Hull. Rosin is quiet, at 13*s.* 6*d.* to 14*s.* for common. Ashes remain quiet at our quoted prices. In other articles very little doing, and without change in price.

The sales of drugs have been moderate. Castor Oil is about ¼*d.* dearer, sound to fine pale selling at the latest sales at 6½*d.* to 7¼*d.*, and yellow and straw 5¾*d.* to 6¼*d.* Oil Aniseed has sold at 5*s.* 7*d.*, and the sales were taken in at 5*s.* 9*d.* A few cases of Oil Cassia sold at 8*s.* 9*d.* Several parcels of Citronelle sold at 5*d.* to 5¼*d.* Turkey Opium is more in demand, at 3*d.* to 6*d.* dearer, 15*s.* 6*d.* to 15*s.* 9*d.* paid for good quality. Rhubarb is steady, a few parcels of good round sold at 2*s.* 3*d.*, and flat at 2*s.* 6*d.* to 2*s.* 7*d.* Shellac is rather dearer, with a fair business doing. Some lots of good Cape Aloes realized 39*s.* to 42*s.* 6*d.*, and soft 33*s.* 6*d.* to 37*s.* Barbadoes brought 70*s.* to 92*s.* 6*d.*, and Socotrine 117*s.* 6*d.* to 180*s.* Camphor has advanced to £13, and holders firm. Some lots of Jamaica Honey sold at 36*s.* to 43*s.* per cwt., and Narbonne 3½*d.* to 4*d.* per lb. Jamaica Sarsaparilla sold at 2*s.* to 2*s.* 3*d.*, and inferior 1*s.* 4*d.* to 1*s.* 9*d.*; Jamaica brought 1*s.* Sales of Cod-liver Oil have been made at 4*s.* 3*d.* to 4*s.* 7*d.*, and better at 5*s.* to 6*s.* Balsam Capivi is rather easier, the latest rates paid were 1*s.* 7*d.* to 1*s.* 9*d.* Cubebs are held for higher prices, the late sales were bought in at £5 15*s.* to £6 10*s.* Ipecacuanha is cheaper, sales of damaged made at 6*s.* 4*d.* to 6*s.* 10*d.* Senna steady; Tinnivelly brought 3¼*d.* to 6½*d.*, and Bombay 2¼*d.* to 3½*d.* Cardamoms have considerably advanced, Malabar last sold at 11*s.*, and good Madras at 9*s.* 6*d.* Bark is without change. Gums are steady, except Olibanum, which is 3*s.* to 5*s.* dearer, some good pale selling at 63*s.* to 71*s.* Turmeric is quiet, and good Bengal is not worth more than 16*s.* to 17*s.* Bees' Wax is without alteration; Gambia is firm in price, and good quality sold at 17*s.* 6*d.* to 18*s.* Cutch is about 1*s.* cheaper, sales of Pegue made at 23*s.* 6*d.* to 24*s.* 6*d.* Saltpetre is quiet, but 47*s.* has been paid for fine. Bengal Logwood has declined, but sales of Jamaica made at 90*s.* to 92*s.* 6*d.*, and Jamaica Fustic at 100*s.* Saffron is dull at 44*s.* to 46*s.* for fine. Other goods have remained without change, and little doing.

PRICE CURRENT.

☞ *These quotations are the latest for* ACTUAL SALES *in Mincing Lane. It will be necessary for our retail subscribers to bear in mind that they cannot, as a rule, purchase at the prices quoted, inasmuch as these are the* CASH PRICES IN BULK. *They will, however, be able to form a tolerably correct idea of what they ought to pay.*

	1862.				1861.			
	s.	d.	s.	d.	s.	d.	s.	d.
ARGOL, Cape, pr ct.	87	6	100	0	95	0	105	0
French	30	0	..60	0	60	0	..85	0
Oporto, red	45	0	..48	0	50	0	.. 0	0
Sicily............	65	0	..80	0	85	0	..90	0
Naples, white.....	65	0	..80	0	85	0	..90	0
Florence, white...	90	0	100	0	95	0	105	0
red....	85	0	..87	6	95	0	..97	6
Bologna, white....	115	0	120	0	125	0	.. 0	0
ARROWROOT, duty 4½ per cwt.								
Bermuda ...per lb.	0	10	.. 1	4	0	11	.. 1	3
St. Vincent........	0	3	.. 0	6	0	2¾	0	6
Jamaica.	0	2½	.. 0	3½	0	2½	0	4¼
Other West India.	0	2	.. 0	3½	0	2	.. 0	3¼
Brazil............	0	1½	.. 0	2	0	1½	0	2
East India........	0	1½	.. 0	2½	0	1¾	0	2½
Natal............	0	3	.. 0	7½	0	2½	0	6¼
Sierra Leone......	0	2½	.. 0	3	0	2½	0	3½
ASHES.....per cwt.								
Pot, Canada, 1st sort	36	6	.. 0	0	38	0	.. 0	0
Pearl, do. 1st sort.	37	0	.. 0	0	40	0	.. 0	0

	1862.				1861.			
BRIMSTONE,	s.	d.	s.	d.	s.	d.	s.	d.
rough......per ton	145	0	0	0	160	0	.. 0	0
roll..............	260	0	0	0	270	0	280	0
flour..............	280	0	300	0	290	0	310	0
CHEMICALS,								
Acid—Acetic, pr lb	0	4	.. 0	4½	0	4	.. 0	4½
Citric	1	8½	.. 0	0	1	10	0	0
Nitric	0	4	.. 0	5	0	5	.. 0	5½
Oxalic........	0	9¼	.. 0	9½	0	8¼	0	9
Sulphuric	0	0¾	.. 0	0	0	0¾	0	1
Tartaric crystl	1	8½	.. 1	8¾	1	10	.. 1	10½
powdered.	1	8½	.. 0	0	1	11	.. 0	0
Alum .....per ton.	125	0	130	0	120	0	130	0
powder	145	0	0	0	150	0	.. 0	0
Ammonia. Crb. lb.	0	5	.. 0	6	0	5½	0	6
Sulphate per ton	270	0	290	0	270	0	280	0
Antimony, ore....	260	0	280	0	320	0	340	0
crude, per cwt	24	0	..28	0	30	0	..32	0
regulus	44	0	..46	0	50	0	.. 0	0
French star...	45	0	.. 0	0	51	0	.. 0	0
Arsenic, lump....	17	6	..18	6	17	0	..18	6

PRICE CURRENT—*continued.*

	1862.				1861.			
CHEMICALS.	s.	d.	s.	d.	s.	d.	s.	d.
Arsenic powder ..	8	0	..10	0	9	0	..10	6
Bleaching Powder.	9	0	.. 9	6	9	6	..10	0
Borax, E. I. refind	52	6	.. 0	0	0	0	.. 0	0
British........	62	6	..65	0	63	6	.. 0	0
Calomel....per lb.	2	10	.. 0	0	2	10	.. 0	0
Camphor, refined.	2	8	.. 3	2	2	7	.. 3	2
Copras. grn. pr. tn.	60	0	..65	0	65	0	.. 0	0
Crrsiv. Sublmte. lb	1	11	.. 2	0	1	11	.. 2	0
Green Emrld. pr. lb	0	9	.. 0	11	0	9	.. 0	11
Brunswk. cwt.	14	0	..42	0	14	0	..42	0
Iodine, dry, pr. oz.	0	5	.. 0	5½	0	4¾	0	5
Magnesia Crbn. ct.	40	0	..45	0	42	6	..45	0
Calcined, lb...	1	6	.. 0	0	1	6	.. 0	0
Minium red, pr. ct.	21	6	..23	0	22	6	..23	0
orange........	33	0	..35	0	35	0	.. 0	0
Ptsh. Bichrom. lb.	0	8¼	.. 0	0	0	9¼	0	10
Chlorate	0	0	.. 0	11½	0	10¼	0	10½
Hydriodate oz.	0	4¾	.. 0	5¼	0	5¼	0	0
Prussiate ..lb.	1	0½	.. 0	0	1	1⅓	1	2½
red..	2	1	.. 2	2	2	2	.. 0	0
Precipit. red pr. lb	2	9	.. 2	10	2	9	.. 2	10
white...	2	9	.. 2	10	2	10	.. 0	0
Prussian Blue.....	1	6	.. 1	10	1	6	.. 1	10
Rose Pink....pr ct.	29	0	..30	0	29	0	..30	0
Sal-Acetos...pr lb.	0	10½	.. 0	11½	0	11	0	11¾
Ammoniac, ct.								
British...	36	0	..38	0	32	0	..33	0
Epsom........	8	0	.. 8	6	8	3	.. 8	6
Glauber	5	0	.. 5	6	5	0	.. 5	6
Soda, Ash, pr deg..	0	2	.. 0	2⅛	0	2⅛	0	2⅜
Bicarbonate..ct.	12	0	.. 0	0	13	0	..13	6
Crystals per ton.	87	6	..95	0	85	0	..90	0
Sgr. Lead, whte, ct.	37	0	..40	0	37	0	..38	0
brown........	27	0	..28	0	28	0	.. 0	0
Slphte. Quinine oz								
Britsh in bttl.	7	6	.. 8	0	7	2	.. 7	6
Foreign	7	4	.. 7	6	6	9	.. 7	0
Sulpht. Zinc. .cwt.	14	6	..15	0	14	6	..15	0
Verdigris........lb.	1	3	.. 1	5	1	3	.. 1	5
Vermillon, English	3	0	.. 3	4	3	0	.. 3	4
China ..	2	6	.. 2	8	2	3	.. 2	8
Vtrl. blue or Romn.								
per cwt.	33	6	..35	0	31	6	.. 0	0
COCHINEAL, pr. lb.								
Honduras, black..	2	8	.. 4	0	3	0	.. 4	8
silver...	1	6	.. 3	1	2	1	.. 3	1
Mexican, black....	2	6	.. 2	9	2	5	.. 3	3
silver ..	2	4	.. 2	6	2	3	.. 2	5
Lima	2	7	.. 3	1	2	7	.. 3	3
Teneriffe, black ..	2	7	.. 2	9	2	7	.. 3	4
silver ..	2	4	.. 2	6	2	5	.. 2	7
DRUGS,								
Aloes, Hepatic, ct.	130	0	200	0	70	0	190	0
Socotrine	160	0	480	0	110	0	480	0
Cape, good....	40	0	..42	0	40	0	..42	0
inferior.	20	0	..36	0	30	0	..37	0
Barbadoes....	60	0	420	0	40	0	460	0
Ambergris, gray.								
per oz..	45	0	..52	0	34	0	..42	0
Angelica Root, ct..	20	0	..35	0	28	0	..40	0
Aniseed, China str.	70	0	..78	0	68	0	..78	0
German, &c.	26	0	..40	0	26	0	..40	0
Balsam Canada, lb	1	3	.. 1	4	1	3	.. 0	0
Capivi......	1	8	.. 1	9	1	10	.. 1	11
Peru........	4	6	.. 4	8	4	5	.. 4	9
Tolu	4	0	.. 4	3	3	6	.. 3	9
Bark Cascarilla ct.	22	0	..40	0	24	0	..49	0
Peru crown & grey								
per lb..........	1	2	.. 2	6	1	7	.. 2	6
Calisaya, flat...	3	10	.. 4	6	3	10	.. 4	0
quill....	3	9	.. 4	2	3	4	.. 3	10
Carthagena....	1	2	.. 2	6	1	2	.. 2	0
Pitayo........	1	10	.. 2	9	1	6	.. 2	3
Red	2	6	.. 6	0	2	0	.. 6	0
Bay Berries, pr ct..	22	0	..40	0	22	0	..40	0
Bucca Leaves, lb.	0	3	.. 1	3	0	4	.. 1	3
Camomile Flowers	20	0	..60	0	40	0	..80	0
Camphor, China ..	260	0	270	0	230	0	240	0
Canella Alba......	19	0	..40	0	22	0	.42	0
Cantharides, pr lb.	2	8	.. 0	0	2	1	.. 2	2
Cardamoms. Mlbar.								
good............	11	0	.. 0	0	4	10	.. 5	0

	1862.				1861.			
DRUGS.	s.	d.	s.	d.	s.	d.	s.	d.
Cardamoms, inferior	0	0	.. 0	0	4	6	.. 9	6
Madras..	4	6	.. 9	6	3	0	.. 4	4
Ceylon..	4	4	.. 4	8	4	9	.. 5	0
Cassia Fistula pr ct.	20	0	..32	0	22	0	..30	0
Castor Oil, 1st pale, lb	0	6¾	.. 0	7¼	0	5¾	0	6½
second......	0	5½	.. 0	6½	0	5½	0	5¾
infr. & dark	0	5	.. 0	5½	0	5	0	5¼
Bombay. in csks.	0	4½	.. 0	5¼	0	4¼	0	4½
Castorum	1	0	..26	0	1	0	..28	0
China Root, pr ct.	9	0	..10	0	9	0	..10	0
Coculus Indicus ..	14	0	.. 0	0	12	0	..13	0
Cod-liver Oil, gal...	4	9	.. 6	0	4	9	. 5	6
Clcynth. apple, lb..	0	7	.. 1	0	0	8	.. 1	3
Colombo Rt. pr ct..	15	0	..52	6	15	0	..47	6
Cream Tartar, pr ct.								
French	126	0	127	6	127	6	.. 0	0
Venetian	127	6	130	0	130	0	.. 0	0
grey	112	6	120	0	122	6	125	0
brown........	105	0	110	0	115	0	117	6
Croton Seed	55	0	..80	0	90	0	105	0
Cubebs	115	0	130	0	140	0	160	0
Cummin Seed	48	0	..55	0	36	0	..40	0
Dragon's bld. reed.	160	0	240	0	140	0	280	0
lump...	70	0	200	0	100	0	260	0
Galangal Root....	16	0	..40	0	16	0	..20	0
Gentian Root	17	0	..19	0	14	0	..17	0
Guinea Grains, ...								
per cwt.	50	0	..54	0	46	0	..48	0
Honey, Narbonne.	60	0	..84	0	60	0	..85	0
Cuba	24	0	..36	0	25	0	..40	0
Jamaica....	26	0	..65	0	26	0	..45	0
Ipecacuanha, pr. lb.	7	6	. 0	0	3	6	.. 4	0
Isinglass, Brazil...	0	10	.. 3	10	1	6	.. 4	0
East India......	0	9	.. 3	0	1	0	.. 3	6
West India	3	0	.. 3	0	3	3	.. 3	9
Russian........	9	6	..13	0	9	6	..13	0
Jalap	4	0	.. 5	1	3	10	.. 4	4
Jniper Berries cwt.								
German & Frnch	9	0	..11	0	10	0	..10	6
Italian	10	0	..12	0	9	6	..12	0
Lmon Juice, pr deg.	0	0½	.. 0	1	0	1	.. 0	1⅛
Liquorice, per cwt.								
Spanish	83	0	..90	0	83	0	..90	0
Italian	85	0	..95	0	85	0	..95	0
Manna, flaky	2	0	.. 2	6	3	3	.. 3	9
small	1	6	.. 1	9	1	6	.. 2	0
Musk......per oz.	20	0	. 30	0	26	0	..34	6
Nux Vomica......	8	0	.. 9	0	8	0	.. 9	0
Opium, Turkey ..	12	0	..16	0	16	0	..17	6
Egyptian..	6	0	..11	6	6	0	..13	0
Orris Root, pr cwt.	27	0	..29	0	27	0	..29	6
Pink Root, per lb...	1	10	.. 2	2	1	2	.. 1	4
Quassia (bit. wd) ton	70	0	..80	0	70	0	..80	0
Rhatania Root, lb.	0	4½	.. 1	0	0	8	.. 0	9
Rhbrb. China, rnd.	0	9	.. 2	10	1	4	.. 2	9
flat	1	2	.. 3	0	1	2	.. 2	10
Dutch, trmd.	3	6	.. 4	0	3	3	.. 3	6
Russian	11	6	.. 0	0	11	0	.. 0	0
Saffron, Spanish ..	44	0	..46	0	44	0	..49	0
Salep ....per cwt.	130	0	170	0	250	0	280	0
Sarsaparilla, Lima	0	9	.. 1	3	0	10	.. 1	2
Para	0	10	.. 1	2	0	10	.. 1	2
Honduras.	0	10	.. 1	4	0	11	.. 1	6
Jamaica..	1	5	.. 2	3	1	3	.. 2	5
Sassafras..per cwt.	11	0	..12	0	10	0	..12	0
Scammony. per lb.								
virgin	28	0	..36	0	28	0	..34	0
second ..	14	0	..24	0	14	0	..24	0
Seneka Root......	3	9	.. 4	0	2	2	.. 0	0
Senna, Calcutta ..	0	1½	.. 0	2½	0	1½	0	2½
Bombay	0	2½	.. 0	3¾	0	2½	0	2½
Tinnevelly..	0	3	.. 1	6½	0	2½	0	10½
Alexandria	0	3	.. 0	6	0	4	.. 0	7½
Snake Root	2	0	.. 2	3	1	2	.. 1	3½
Spermacceti, refined	1	0	.. 1	2	1	2	.. 1	4
Squills	0	1	.. 0	0	0	1	.. 0	2
Tamarinds, E. Ind.	10	0	..13	0	9	0	..12	0
W.I. per cwt.	15	0	..32	0	16	0	..32	0
Valerian Root, Eng	20	0	..40	0	20	0	..40	0
Terra Japonica—								
Gambier, cwt ..	17	0	..18	0	16	3	..16	9
Cutch, cwt	22	0	..25	0	22	6	..23	6

PRICE CURRENT—*continued.*

	1862.				1861.			
DRUGS	s.	d.	s.	d.	s.	d.	s.	d.
Vanilla, Mexican lb	25	0	..55	0	30	0	..70	0
Wormseed, pr cwt.	2	0	.. 0	0	5	0	.. 0	0
GUM .... per cwt.								
Ammoniac, drop..	90	0	120	0	60	0	100	0
lump ..	15	0	..55	0	15	0	..35	0
Animi, fine pale ..	300	0	320	0	290	0	310	0
bold amber.	200	0	280	0	260	0	270	0
medium....	170	0	200	0	170	0	230	0
small & dark	100	0	125	0	100	0	160	0
ordinry dark	40	0	..80	0	50	0	100	0
Arab.E.I.f.palepkd	50	0	..58	0	48	0	..52	0
unsortd, good to f	32	0	..45	0	36	0	..44	0
red and mixed	20	0	..30	0	28	0	..34	0
siftings	0	0	.. 0	0	18	0	..23	0
Turkey, pkd. gd to f.	105	0	160	0	110	0	150	0
second & infr.	40	0	100	0	42	0	105	0
in sorts	30	0	..40	0	30	0	..43	0
Gedda............	26	0	..28	0	26	0	..27	0
Barbary, white ..	32	0	..40	0	30	0	..33	0
brown ..	28	0	..30	0	26	0	..27	0
Australian...... .	23	0	..25	0	16	0	..18	0
Assafœt. fr. to gd.	30	0	110	0	20	0	..95	0
Benjamin, 1st. qual.	400	0	600	0	360	0	680	0
2nd qual	280	0	410	0	160	0	330	0
3rd ,,	50	0	190	0	60	0	150	0
Copal, Angola red.	105	0	120	0	100	0	125	0
pale.	97	6	105	0	85	0	105	0
Benguela....	110	0	125	0	85	0	110	0
Sierra Lne lb	0	10	.. 1	8	0	8	.. 1	8
Manilla prct	20	0	..43	0	15	0	..43	0
Dammar ple. pr ct	42	0	..50	0	44	0	..49	0
Galbanum........	100	0	120	0	120	0	160	0
Gmbge. pkd. pipe	140	0	180	0	120	0	150	0
in sorts.....	80	0	120	0	80	0	110	0
Guaiacum ..pr. lb.	0	7	.. 1	6	0	7	.. 1	6
Kino ....per cwt.	200	0	220	0	160	0	200	0
Kowrie..........	24	0	..27	6	16	0	..18	0
Mstic. pkd. pr lb..	5	0	.. 5	6	7	6	.. 8	6
Myrrh gd & fi pr ct	200	0	245	0	140	0	180	0
sorts........	70	0	150	0	80	0	130	0
Olibanum, pl. drop	60	0	..66	0	60	0	..68	0
ambr & yel.	40	0	..54	0	40	0	..54	0
mixd. & dk.	10	0	..26	0	12	0	..26	0
Senegal	38	0	..40	0	36	0	..45	0
Sandrac..........	75	0	105	0	90	0	105	0
Tragacanth, leaf..	180	0	340	0	190	0	340	0
in sorts.	100	0	130	0	100	0	130	0
OILS.......per tun.	£	*s.*	£	*s.*	£	*s.*	£	*s.*
Seal, ...	34	0	..42	0	32	0	..36	0
Sperm, body......	90	0	.. 0	0	98	0	.. 0	0
Cod..............	40	0	..41	0	36	10	..37	0
Whale, Greenland.	0	0	.. 0	0	0	0	.. 0	0
Sth Sea pale	35	0	..37	0	37	0	.. 0	0
E. I. Fish...	32	10	..33	0	29	10	..30	0
Olive, Galipoli, ton.	56	0	..57	0	59	0	.. 0	0
Florence, ½-chst.	1	0	.. 1	2	0	19	..0	20
Cocoant. Cochn. tn	53	6	..54	0	0	0	..45	10
Ceylon	52	6	..53	6	44	0	.. 0	0
Sydney	46	0	..51	0	41	0	..43	0
Ground Nut & Gin.								
Bombay........	44	10	..45	0	39	0	.. 0	0
Madras	45	10	..46	10	40	0	..41	0
Palm, fine........	41	10	..42	10	44	0	..45	0
Linseed..........	39	0	.. 0	0	30	0	.. 0	0
Rapesd. Engl. pale	48	0	.. 0	0	41	0	.. 0	0
brown.......	46	0	.. 0	0	38	6	.. 0	0
Foreign do..	48	0	.. 0	0	42	0	.. 0	0
brown......	46	0	.. 0	0	38	0	..38	10
Lard	51	0	.. 0	0	59	0	.. 0	0
Tallow	40	0	.. 0	0	35	0	.. 0	0
Rock Crude	10	0	..12	0	0	0	.. 0	0
OILS, Essential—	*s.*	*d*	*s.*	*d.*	*s.*	*d.*	*s.*	*d.*
Almond essen. lb.	19	0	.. 0	0	30	0	..31	0
expressed..	0	0	.. 0	0	1	0	.. 0	0
Aniseed..........	5	7	.. 5	9	6	10	.. 6	11
Bay.......pr cwt.	130	0	140	0	122	6	.. 0	0
Bergamott, pr lb.	6	6	..14	0	6	6	..14	0
Cajeputa, bond, oz.	0	1½	.. 0	2	0	1½	0	1¾
Caraway .....pr lb.	4	3	.. 6	0	4	3	.. 6	0
Cassia............	8	6	.. 0	0	8	9	.. 0	0
Cinamon (in b), oz.	1	0	.. 4	0	1	6	.. 3	6
Cinnamon Leaf...	0	2	.. 0	4	0	1	.. 0	2½

OILS.	s.	d.	s.	d.	s.	d.	s.	d.
Citroncl..........	0	4½	.. 0	5	0	4¾	0	5
Clove	0	4	.. 0	0	0	4¼	0	0
Croton	0	3	.. 0	4	0	3	0	4
Juniper ....per lb.	1	10	.. 4	0	1	10	.. 4	0
Lavender	2	6	.. 5	0	2	6	.. 5	0
Lemon	5	0	..10	6	5	0	..10	6
Lemongrass, pr oz	0	5	.. 0	6	0	6	.. 0	7¼
Mace, ex	0	1½	.. 0	2	0	2	.. 0	2¼
Neroli............	6	0	.. 9	0	6	0	.. 9	0
Nutmeg	0	1¼	.. 0	2½	0	1¾	0	2¼
Orange ....per lb.	6	6	.. 7	0	7	0	.. 8	0
Otto Roses, per oz.	14	0	..24	0	16	0	..25	0
Peppermint, pr lb.								
American	7	0	..12	6	7	6	..13	6
English	33	0	..38	0	35	0	..42	0
Rhodium ..per oz.	3	9	.. 6	0	3	9	.. 6	0
Rosemary..per lb.	1	10	.. 3	0	1	10	.. 3	0
Sassafras	3	6	.. 4	0	3	0	.. 3	6
Spearmint........	5	0	..12	6	5	0	..12	6
Spike	1	3	.. 1	6	1	3	.. 1	6
Thyme	1	9	.. 2	6	1	9	.. 2	9
PITCH, Brtsh, pr cwt.	8	0	.. 0	0	6	0	.. 6	3
Swedish	10	6	..11	0	10	3	.. 0	0
SALTPETRE, pr cwt.								
Bngl, 6 p c. or under	44	0	..47	0	37	0	..37	6
over 6 per cent.	41	0	..43	6	33	6	..36	0
Madras	39	6	..41	0	31	0	..35	0
Bombay	37	0	..38	0	30	0	..33	0
British-refined....	45	0	..46	0	37	0	..38	0
Nitrate of Soda ..	14	0	..14	6	12	6	..13	6
SEED, Canary, pr qr.	36	0	..50	0	30	0	..46	0
Caraway, Eng, p. c.	0	0	.. 0	0	28	0	..30	0
German, &c	0	0	.. 0	0	0	0	.. 0	0
Coriander	0	0	.. 0	0	0	0	.. 0	0
East India......	0	0	.. 0	0	0	0	.. 0	0
Hemp............	46	0	..50	0	46	0	..48	0
Linsoed, Black Sea	57	0	..57	6	51	0	..52	0
Calcutta........	59	0	..61	0	51	0	..53	0
Bombay........	64	0	.. 0	0	53	6	..55	0
Egyptian	58	0	.. 0	0	50	0	.51	0
Mustard, brn, p. bhl	0	0	.. 0	0	5	0	..12	0
white..	0	0	.. 0	0	5	0	..10	0
Poppy, E.I. per qr.	58	0	.. 0	0	57	0	..58	0
Rape, English	0	0	.. 0	0	0	0	.. 0	0
Danube	0	0	..70	0	62	0	.. 0	0
Calcutta, fine ..	64	0	.. 0	0	55	0	.. 0	0
Bombay........	68	0	..72	0	60	0	..66	0
Teel, Sesme or Gngy	66	0	..70	0	63	0	..66	0
Cotton.... per ton	150	0	155	0	150	0	0	0
Gnd. Nut Krnels, tn	350	0	365	0	310	0	330	0
SOAP, Lnd. yel. pr ct.	21	0	..36	0	21	0	..38	0
mottled	34	0	..36	0	34	0	..38	0
curd........	50	0	.. 0	0	52	0	.. 0	0
Castile	38	0	..40	0	37	0	..40	0
Marseilles	40	0	..41	0	40	0	..41	4
SOY, China, per gal.	2	6	.. 2	8	2	4	.. 2	5
Japan	0	8	.. 0	10	0	8	.. 0	10
SPONGE, Turk. f. pkd	20	0	..24	0	20	0	..26	0
fair to good	8	0	..18	0	9	0	..18	0
ordinary..	3	0	.. 6	0	3	0	.. 8	0
Bahama .,	0	4	.. 1	3	0	3	.. 1	0
TURPENTINE,								
Rough..per cwt.	0	0	.. 0	0	16	0	.. 0	0
Spirits, English ..	72	0	.. 0	0	43	0	.. 0	0
American, incsks	74	0	.. 0	0	44	0	.. 0	0
WAX, Boes, English	165	0	175	0	165	0	170	0
German	170	0	180	0	160	0	165	0
American	160	0	170	0	180	0	200	0
white fine	0	0	.. 0	0	200	0	210	0
Jamaica..........	170	0	180	0	190	0	200	0
Gambia	160	0	170	0	180	0	.. 0	0
Mogadore	120	0	160	0	125	0	150	0
East India........	140	0	170	0	150	0	170	0
ditto, bleached..	160	0	195	0	170	0	220	0
vegetable, Japan..	56	0	..75	0	57	0	..64	0
WOOD, DYE, per ton,								
Fustic, Cuba	145	0	0	0	175	0	180	0
Jamaica	100	0	0	0	105	0	..0	0
Savanilla	100	0	..0	0	110	0	115	0
Zante	0	0	..0	0	140	0	170	0
Logwood, Cmpchy	190	0	..0	0	130	0	135	0
Honduras	140	0	..0	0	110	0	115	0
St. Domingo. ..	110	0	115	0	100	0	105	0
Jamaica........	95	0	..97	6	95	0	..97	6

PATENTS

THE abridged Specifications of Patents given below are prepared specially for this Journal by Mr. R. Brooman, from official copies supplied by the Government, and are therefore the property of the Proprietor of this Journal. Other papers are requested not to reproduce them without acknowledgment :—

2783. H. ORTH. *An improved soap.* Dated Nov. 5, 1861.

This consists of a mixture or combination of about 100 parts in weight of finely levigated clay, such as pipe clay, china clay, or other aluminous or silicious earths; 20 parts of caustic alkali, such as caustic potash, caustic soda, or caustic ammonia, or the carbonates or bicarbonates of soda, potash, or ammonia, corresponding to an equal amount of caustic alkali, and 20 parts of resinous matter, such as ordinary fine resin or any other resin of a similar nature capable of being saponified. These proportions may be varied according to the quality of the soap it is desired to obtain. In preparing this soap, the resinous and alkaline or caustic alkaline ingredients are mixed with about 50 parts by weight of water, and boiled together, ebullition being continued until the alkali and the resin are combined and saponified. The saponified mass is then mixed with the argillaceous or earthy matters, the whole being worked into a homogeneous paste, which is afterwards dried, and which is then ready for use. *Patent completed.*

2801. J. BARROW. *Improvements in the manufacture of benzole, naphtha, naphthaline, aniline, and carbonic acid.* Dated Nov. 7, 1861.

This invention consists in treating coal directly for the manufacture of the above-named products (and in avoiding as much as possible the production of gas), instead of the coal tar of gas works. The details of the process are voluminous. *Patent completed.*

2819. R. A. BROOMAN. *Improvements in obtaining alkaline phosphates.* (A communication.) Dated Nov. 9, 1861.

The process, the subject of this invention, is applicable to all mineral and animal substances containing phosphate of lime, such as bones, animal black, coprolites, phosphates of lime (apatite or phosphorite). The substances are treated with a quantity of sulphuric acid in proportion to their richness in phosphate and carbonate of lime; soluble phosphates of lime are obtained, which are separated by washing. If the acid solution thus obtained contains a small proportion of iron, it can with advantage be converted into Prussian blue through the action of prussiate of potash. The acid liquids are separated and evaporated, and when they attain a certain degree of concentration they may be considered as a powerful acid; in fact it is a mixture of free sulphuric and phosphoric acids, containing sulphate and phosphate of lime, as well as sulphates and phosphates of potash, proceeding from the decomposition of the prussiate. If, then, to this acid liquor be added a salt of potash or soda formed by a volatile acid (hydrochloric, carbonic, sulphuric, or nitric acid for example), and evaporation be continued to perfect dryness, there will be two products: 1st, a volatile product, which will be the acid of the decomposed salt; 2nd, a solid and fixed product, which will be a phosphate of soda or potash. *Patent completed.*

2871. F. R. HUGHES and T. RICHARDSON. *Improvements in treating certain natural saline compounds to fit them for agricultural use, and in order to obtain potash and other salts.* Dated Nov. 14, 1861.

This consists in treating those material compounds of alkaline and other salts, which are found at Strassforth, in the duchy of Magdeburg, and in other places, so that they may be used for manuring land, and to separate the potash and other salts therefrom. These natural compounds contain a deliquescent salt (muriate of magnesia), which the inventor separates by steeping them in a small quantity of cold water, by which the greater part of this salt is dissolved out; or they heat these natural compounds with or without steam, so as to decompose the greater part of the muriate of magnesia; and the residual mixture of salts from either process, having by these means lost its deliquescent properties, is suitable for application as a manure. The mode of separating the potash may be varied. *Patent abandoned.*

2903. T. REDWOOD. *Improvements in the manufacture of starch, and of a vegetable sizing powder.* Dated Nov. 19, 1861.

This relates, 1, to the manufacture of starch from rice by the use of a caustic alkaline solution, and consists in adding oxide of zinc to the solution of caustic soda, or other alkaline solution, in which the rice is macerated. It relates also to the treatment of starch, so as to impart properties to it which increase its value as a material to be used in sizing paper, &c. This part of the invention consists in adding to the starch an acid solution of chloride of zinc, then drying the starch with the solution which has been added to it, and lastly, treating the dried starch in an oven at a temperature of about 240° Fahrenheit. *Patent completed.*